The Journal

OF THE

Jamaica Agricultural Society.

VOL. XI. OCTOBER, 1907. No. 10.

BOARD OF MANAGEMENT.

THE usual monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the office of the Society, 82 Hanover Street, Kingston, on Thursday, 19th September, 1907, at 11.40 a.m. Present: His Excellency Sir Sydney Olivier, K.C.M.G., presiding; the Hons. H. C. Bourne, W. Fawcett, Geo. McGrath, R. P. Simmonds, Messrs. D. Campbell, R. Craig, E. W. Muirhead, and the Secretary, John Barclay.

Mr. J. R. Williams sent an apology for absence. Messrs. John Cameron and J. Shore intimated that they were leaving the Island for two months.

Presentation of Cotton Medals. The Secretary read letter from the Colonial Secretary's Office as follows:—

With reference to your letter, dated the 21st June last, recommending the award of the gold and silver medals offered by Sir Alfred Jones for competition amongst growers of cotton in Jamaica as follows, viz.: the gold medal to Mr. L. G. Desporte, Half-way-Tree, for a successful cultivation of Sea Island cotton, and a silver medal to Mr. J. M. Lewis, Yallahs, for cultivations of Sea Island and Caravonica cotton, I am directed by the Governor to state, for the information of the Jamaica Agricultural Society, that these recommendations were duly transmitted to Sir Daniel Morris, who has now forwarded the gold and silver medals, and suggested that, possibly, His Excellency might be willing to present them to the winners at a meeting of the Agricultural Society.

As His Excellency would like to carry out this suggestion and present the medals, I am to ask that you will be so good as to invite Mr. Desporte and Mr. Lewis to attend the next meeting of the Board of the Jamaica Agricultural Society, in order to enable His Excellency to do this.

Mr. Desporte and Mr. Lewis being in attendance, His Excellency the President asked the Board to suspend the proceedings, in order that he might present the medals referred to.

Mr. Desporte, said His Excellency, had made himself notable in St. Andrew by his energy in this matter, and Mr. Lewis, of Yallahs, had also been deemed worthy of the second medal. He was sorry to say that the other second silver medal was not awarded, owing to the fact that no competitor came up to the proper standard. The purpose which Sir Alfred Jones, and the British Cotton Grow-

ing Association, had in view in awarding these prizes, was, to his mind, a well considered one. When he was in this island some years ago, they were taking up the question of cotton cultivation here, and it was being attacked in different directions. It was being attacked by certain planters, who were engaged in private enterprises, and also by a planting company, which was then being formed. They were also endeavouring in St. Elizabeth, and elsewhere, to induce the small settlers and peasant proprietors to take up the cultivation of cotton. Since that time he had seen a great deal of the work of the British Cotton Growing Association in other parts of the world, and, although in Jamaica one or two of the cotton experiments—especially the experiments conducted by the company in planting on a large scale—gave very discouraging results, those results had not been, in the least degree, any more discouraging than similar experiments on a large scale had been elsewhere. He might say that, practically, all the experiments conducted by the British Cotton Growing Association in West Africa—on the Gold Coast, Sierra Leone, Southern Nigeria, and Lagos—where the experiments were made on a large scale, came to very much worse grief than the experiments which were made by the Cotton Company in Jamaica, or by individual planters, the fact being that in these enterprises the people went in for large cultivations before they knew how to manage a small one, and they had to abandon very large experiments. But, at the same time, there had been in Lagos and Southern and Northern Nigeria, and especially in these West African Colonies, where there was a large population, a most astonishing production of cotton, and the cotton trade had developed to a great extent, simply by encouraging the small peasant proprietors to grow cotton, and bring it to the ginneries. The cotton cultivations in Lagos had more than redoubled what they were formerly, and the trade was going ahead largely. Conditions in those parts of the world were not precisely the same as here, but the success which had met the efforts of the British Cotton Growing Association in those parts, was sufficient to encourage us to endeavour to do something similar in this island. Before he passed from this point, he would say that in the other West Indian Islands—in Barbados, Montserrat, Antigua, and St. Vincent—cotton had also made much development, and had yielded the producers in those places considerable profit; and in Barbados and Montserrat, and to a certain extent, in St. Vincent, cotton had been, to a considerable extent, a planter's crop, but the conditions had been different there. In Barbados and Antigua and Montserrat, the labour supply was abundant, and wages were very low; land was almost fully in the control of the planters, and, in Barbados, there was a very close and careful system of agriculture, so that to take on cotton, as a rotation crop with sugar, was not such a difficult and risky enterprise, as it was in this island, to start cotton cultivation, on a large scale, in a district, where the planting industry had not been continuously carried on, and where the labour supply was, perhaps, deficient. But in this island, as in West Africa, they had a large quantity of men having smaller or larger

holdings, and residing on them, and were, therefore, able to watch their crops. These men could grow cotton, as was done in West Africa, by mixing it with other crops. Agriculture in West Africa was carried on in much the same way as it was done here. The people grew corn and cassava, and the men lived on their holdings, and they had their families, who, if they were only trained to it, could pick their cotton, if they knew when and how to pick it. And cotton would become here a very useful adjunct to the money-earning capacity of small settlers, and that was especially the case in St. Andrew. *Consequently, the experiences of cotton* experiments here and elsewhere would be very hopeful for the future of cotton growing in Jamaica, if it could be grown especially by the small settlers. When it had been grown by the small settlers, and they had a larger number of persons accustomed to the cultivation, then it might possibly become easier for the large planter to get the kind of labour that he would require to deal with his crop, and he would experience less difficulty. For the present he His Excellency thought it was the duty of this Society, and all those who were concerned in the development of the cotton industry, to do all they could to promote and encourage cotton growing on small holdings, and, in order to make that a success, it was necessary that there should be, in all districts where the cultivations were carried on, a ginnery, or, at any rate, merchants to buy the cotton at a fixed price. They would then have to announce that unginned cotton would be bought at a fixed price. And they also had to encourage the cultivation by offering, he suggested, at local agricultural shows, prizes for cotton in the same way as was done for other minor products. He was glad to see that the efforts of Mr. Desporte in St. Andrew, and his energy in this particular line of development, had resulted in considerable planting of cotton this autumn, and, he hoped, notwithstanding the calamity that had befallen some of the seeds which had been planted in the parish, that he had obtained a sufficient number of seeds to give a fairly satisfactory experiment during this coming season. They were indebted to men of the energy of Mr. Desporte for pressing this matter on the small cultivators of St. Andrew, and he was sure that the Board of Management of the Agricultural Society would heartily endorse the action of Sir Alfred Jones in desiring to express public recognition of the good service which had been *done by men who had interested* themselves in this matter. The development of cotton growing on small holdings, as well as large, could not fail to be of benefit to the merchants and the small shopkeepers, and generally to enhance the whole prosperity of the island, where it came to a successful issue on small holdings as well as large ones. He had great pleasure in offering Mr. Desporte this gold medal for the best cultivation on an area of not less than one acre in St. Andrew.

His Excellency handed Mr. Desporte the medal, and, in addressing Mr. Lewis, the Governor said he had much pleasure in presenting him with the silver medal for the second best cultivation. He joined in the congratulations of the Board of Management.

Mr. Lewis thanked the Governor for his very encouraging remarks and for the interest he was taking in the cotton industry.

Mr. Desporte also thanked the Governor. He said he hoped to show, in spite of the mishap to the imported seeds, good results from the native seeds, if they could only get showers of rain until the end of this month. He was doing everything that was possible to carry the cultivation through successfully.

Minutes. The minutes of the previous meeting in August having been printed in the current JOURNAL, which was in the hands of the members, were taken as read, and confirmed.

The following letters, arising out of the minutes, were considered :—

Elder, Dempster & Co's Money. (*a*) Letter from Colonial Secretary's Office as follows :—

No. 7802-3580. 13th August, 1907.

I am directed by the Governor to acknowledge the receipt of your letter of the 27th June informing me of the appointment of Mr. J. Hirst as Instructor for the District, comprising the parishes of St. Catherine and Clarendon, at a salary of £200 per annum, and, in reply, to say that His Excellency approves of the appointment on the conditions set out in your letter. I am also to acknowledge the receipt of your letter of the 8th July, enclosing a copy of the statement regarding the appropriation of the money paid, and to be paid, by Messrs. Elder, Dempster & Co. on account of the Agricultural Instructors.

2. It is understood that Mr. Hirst commenced his duties on the 1st July, and, therefore, £150 will be required to meet his salary for the current financial year. From the statement forwarded, it is understood that the Society will also need, in the current year, £30 from the back payments made by the Company. These two amounts make a sum of £180, for which a special warrant will be given to the Treasurer to enable him to pay it over to your credit. It is also understood from your statement that in future the amounts per annum that your Society would desire, from the accumulated balance are as follows, viz. :

In 1908-09	£200	
	30	£230
,, 09-10	200	
	30	230
,, 09-11	50	
	30	80
Total .		£540

This £540, when added to the £180 allotted this year, and to the £260 8s. 4d. allotted last year, comes to a total of £980 8s. 4d.

The amount actually received last year was £875, to which should be added one additional quarter's payment (£125) due in respect of March quarter, 1907, making £1,000 in respect of accumulations. This leaves at present unallotted the sum of £19 11s. 8d., which will be added to the grant in any year, on your notifying the Government in time for the amount to be placed on the Estimates.

The £500, to be received annually from the Company, will, of course, also be paid over to your Society, in addition to the amounts set forth in

paragraph 2. With regard to the payment of the £500 for this year, you were communicated with on C. S. O., No. 3957-4625, dated the 26th April, 1907.

STATEMENT OF ACCOUNT RE AGRICULTURAL INSTRUCTORS.

Amount available from Elder, Dempster & Co. 4th April, 1905, to 4th January, 1907, as directed by the Crown Agents from their subsidy		£875	0	0
Amount due from 4th January to 4th April, 1907, available		125	0	0
		£1,000	0	0
Less paid to Agricultural Society to 31st March, 1907		260	8	4
Amount accumulated		£739	11	8
Amount available per annum:				
Elder, Dempster & Co.	£500			
Agricultural Society's Allocation ..	320	£820	0	0
The present Instructors are paid:				
Mr. Arnett £300, Mr. Palache £300, Mr. Mennell £250		£850	0	0
Amount to be drawn per annum from above accumulation during the period Messrs. Elder, Dempster & Co's payments run 4 years		£30	0	0
Sum accumulated as above		£739	11	8
Deduct 4 years at £30 as above		120	0	0
Amount available for further instruction ...		619	11	8
Mr. Hirst, Instructor for St. Catherine and Clarendon, at £200 per annum for 3 years		600	0	0
Balance still available and retained for special services of Instructors		£19	11	8

Rat Virus. (*b*) Letter from Ratin Bacteriological Laboratory, London, as follows:—

16th August, 1907.

I beg to acknowledge, with thanks, your favour of the 31st ult., and am greatly interested in the report made by Mr. Craig. You say that the results have not acted as expected, and I would like to point out that the Ratin No. 2, which is the only preparation we use for export, and which was sent you, is an improvement on our old Ratin, which, originally, was prepared for immune rats.

The No. 2 has the advantage of the ordinary Ratin of being quick acting, and deadly to any rat, whether immune or non-immune, and, further, it retains its strength for three months from date of production. We find that customers, who buy the ordinary Ratin, feel that it is, at times, a too slow acting remedy, and numbers now prefer the No. 2. To my mind, it is a great advance on any virus preparation, and, as you know, it is absolutely harmless to all animals but rats and mice.

It may interest you to hear that the Acting Surgeon-General of Georgetown, Demerara, has written us, saying how very satisfied he was with the Ratin No. 2, and a further supply has been ordered by him, and from Australia, India, and Egypt we have equally good reports. The reason why we advise Ratin being packed in paper is, because, in this way the microbe is not exposed to the sun or air, and it retains its strength in the paper for about thirty-six hours.

In order to be able to discuss Mr. Craig's report better, it would be necessary for us to know the extent of the area over which he tried the Ratin. There is nothing Utopian in what we claim, indeed, the results are the best proof of the accuracy of our statements.

I should be glad to hear further from you, and I hope that you will be able to get some of your members to pass a trial order with us.

Mr. Craig stated he had tried further supplies of this virus, and he had not found it to act as stated.

The Secretary was instructed to inform the Ratin Company of this.

Agricultural Conference. (c) Letter from Colonial Secretary's Office as follows:—

No. 9018-10806. 16th September, 1907.

I am directed by the Governor to acknowledge the receipt of your letter, dated 19th July last, stating that the Board of Management of the Jamaica Agricultural Society were strongly in favour of the proposal to hold the West India Agricultural Conference in Jamaica in January, 1908, and suggesting Mandeville as the place of meeting.

The terms of your letter were duly communicated to Sir Daniel Morris, who, in turn, wrote to the Governor on the subject of an arrangement he desired to have made with Messrs. Elder, Dempster & Co., for the S. S. "Port Kingston," or other contract steamer, to call at Barbados on both the outward and homeward voyages, so as to convey delegates to and from the conference. After consulting the Privy Council, His Excellency caused Sir D. Morris to be informed that this Government would have no objection to the arrangement, and informed him that the dates of sailing of the "Port Kingston," as at present fixed, would bring her to Jamaica on the 24th January.

His Excellency regrets now to inform your Society that Sir D. Morris telegraphed on the 10th current, from Toronto, stating that Sir Alfred Jones cables: "Proposals to postpone Conference to 1909," and adding that he is communicating by letter on the subject.

His Excellency the President said that before he came back to Jamaica in May this year, Sir Alfred Jones, on one occasion, stated that he intended to arrange for the "Port Kingston" to bring delegates to Jamaica to attend an Agricultural Conference about the end of this year. Sir Alfred Jones also informed Sir Daniel to that effect, and on the receipt of that intimation Sir Daniel Morris had proceeded to make arrangements for the holding of the Conference in Jamaica. He had also received from Sir Alfred Jones a telegram saying that he would be delighted to receive delegates from the West Indies in Lancashire, and to bring out a deputation from Lancashire to the West Indies in 1909, but not definitely stating whether he desired to place the steamer "Port Kingston" at the disposal of the Conference for 1908 or not, but he gathered from the telegrams that they must expect to have confirmation of Sir Daniel Morris' understanding that Sir Alfred Jones was not disposed to assist in the Agricultural Conference in Jamaica next year. But that did not dispose of the holding of the Conference here. Sir Daniel Morris had cabled from Canada to say what had been done so far, and asking what could be arranged in the matter. Well, he thought it was possible to hold the Conference here without the

assistance of the "Port Kingston." The Royal Mail Company were running the steamer "Solent" round the West India Islands, and, no doubt, the Royal Mail Company could perfectly well arrange to bring on all the delegates to Jamaica from the other West India Islands and take them back, perhaps at less inconvenience to the company than would be caused by the "Port Kingston." He did not know what was the desire of the Board, but he had intended to approach the Royal Mail Company to see whether they could undertake to bring down the delegates here from the West Indies. The main difficulty, it appeared, was one of transport. If the Conference were held with the co-operation of Sir Alfred Jones he would bring out a large number of people as his guests, who would, possibly, take an interest in the Island. That was a point in favour of getting the co-operation of Sir Alfred Jones, but there was no great reason why the delegates could not come out by the Royal Mail Company's steamer, or why the people from England could not come out by the "Port Kingston" direct.

Mr. Muirhead proposed that His Excellency should approach the Royal Mail Company and see if arrangements could be made for them to bring out the delegates.

Mr. Simmonds seconded. He said that if the Conference was held here while the "Port Kingston" was in port she could bring out people from England to attend it.

It was agreed to ask the Governor to approach the Royal Mail Company on the subject.

Live Stock Committee Opinions re Duty on Breeding Stock. (*d*) The Secretary was instructed to re-submit these, and get them put in the form of a report.

C. S. O. Letters. The Secretary submitted the following letters from the Colonial Secretary's Office:—

(*a*) Re inspection of the S. S. "Port Antonio," "Port Kingston," and "Port Henderson" on the 20th June, 4th July, and 18th July respectively, by the Harbour Master, who reported that he found the accommodation for fruit conformed to the terms of the contract.

(*b*) Re Jamaica Rum in the United Kingdom.

No. 7173-S.S. 243. 25th July, 1907.

I am directed by the Governor to state, for the information of the Jamaica Agricultural Society, that Sir J. A. Swettenham, in April last, submitted to the Secretary of State for the Colonies, a suggestion by Mr. J. C. Nolan that Jamaica rums should be afforded a separate entry in the Imperial revenue returns, and stated that any action of the kind desired, which would have the effect of distinguishing Jamaica rum from the rums of other places, would be a boon to this colony.

2. The Earl of Elgin has now transmitted to this Government copies of correspondence between the Colonial Office and the Imperial Customs and Inland Revenue Departments on the question, which show that arrangements are being made, with a view to the designation, "Rum from Jamaica," being given on permits which accompany rum of exclusively

Jamaican origin on the delivery of the spirits from bonded warehouse. The full text of this correspondence has been published in the "Jamaica Gazette."

(*c*) Re Railway rates for oranges.

Intimating that the reduction of 25 per cent. of the original rates for the conveyance of oranges by the Railway would be discontinued from September 1st till November 30th.

(*d*) Re Contagious Diseases Animals Law.

No. 7641-8711. 8th August, 1907.

I am directed by the Governor to acknowledge the receipt of your letter, No. 1311, dated the 19th ultimo, on the subject of the proposed Contagious Diseases Animals Law, and, in reply, to say that the question of proceeding with legislation on the subject in the next session of the Legislative Council will be duly considered.

(*e*) Wireless Telegraphy.

No. 8071-S.S. 281. 21st August, 1907.

With reference to your letter, dated 21st June last, forwarding a copy of a resolution passed at the half-yearly general meeting of the Jamaica Agricultural Society, held on the 20th June, relative to the matter of the establishment of a wireless telegraph station in Jamaica, I am directed by the Governor to state, for the information of the Jamaica Agricultural Society, that the Secretary of State for the Colonies, to whom a copy of the resolution referred to was sent, explains that it has been found to be impracticable to proceed, at the present time, with any scheme for the establishment of a general Government system of wireless telegraphy throughout the West Indies, and that no action in this direction is likely to be taken at present beyond the establishment of communication by wireless telegraphy between British Guiana and Trinidad, proposals for which have been receiving attention.

2. I am to add that the matter of the grants of licenses to applicants for permission to operate such a system in Jamaica is receiving the consideration of His Majesty's Government.

His Excellency stated that since that letter was written he had later information, and the Government would now be in a position to grant the licenses as referred to.

(*f*) Re Fibre Industry.

No. 8281-9927. 27th August, 1907.

I am directed by the Governor to forward herewith, for the information of the Jamaica Agricultural Society, a copy of correspondence between this Government, and Mr. W. Horace Locher, of St. Louis, relative to the development of the fibre industry in this colony.

Dolph Building, St. Louis, August 8, 1907.

My object in addressing your Excellency is, that I am informed that some years ago the Government of Jamaica was desirous of establishing the cultivation of Ramie, Hemp, and Jute fibres in Jamaica, but abandoned the idea, for the reason that suitable machinery to make it a commercial commodity was not obtainable.

I have now the honour to inform your Excellency that a machine has been devised and constructed for the purpose of decorticating Ramie, Hemp, and Jute fibres, and has demonstrated its capacity as five thousand pounds of fibre per day. I enclose sample of the product of this machine, and also the same chemically treated for weaving purposes.

Your Excellency is, doubtless, aware that the climate and soil of Jamaica is particularly adapted for the rapid growth of fibre. Hemp, Ramie, and Jute are easily propagated, Hemp particularly, as the seed is

sown broadcast, and, without any cultivation, the fibrous stalks are ready for harvesting in ninety to one hundred days, producing fifteen hundred to two thousand pounds of fibre per acre, worth twenty-two pounds per ton, as produced by the machine, and sixty pounds per ton when degummed, as per bleached sample with a demand much larger than the present supply.

If the Government of Jamaica is still desirous of diversifying the agriculture, and considers this time propitious, we will, at our expense, bring a machine to Jamaica, and grow an acreage of Hemp, demonstrate the efficiency of the machine, and degum and bleach for weaving purposes, and market fibre, providing, we are assured, that if same demonstrates satisfactorily, a company will be organized to acquire the rights of operating in Jamaica at a figure corresponding to its value.

Hoping to be favoured with an early answer, when I shall be glad to furnish additional information regarding the cultivation and preparation of these fibres.

No. 8279-9927. 27th August, 1907.

I am directed by the Governor to acknowledge the receipt of your letter, dated the 8th instant, informing His Excellency that a machine had been devised and constructed for the purpose of decorticating Ramie, Hemp, and Jute fibres, and signifying your willingness to demonstrate the efficiency of this machine, provided this Government is still desirous of developing the fibre industry, and, on the understanding, that if the machine satisfactorily demonstrates its efficiency, a company will be organized to acquire the rights of operating in Jamaica.

2. In reply, I am to say that this Government will be glad to do anything in its power to stimulate the development of a fibre industry, and that former ventures, in the cultivation of Sisal Hemp and Ramie in Jamaica, have proved unprofitable, owing to the lack of a suitable machine for treating the produce. If you have, however, a machine capable of dealing with broad-leaved fibre plants, such as Sisal, material could be supplied to you without difficulty for a demonstration, or a few acres of Ramie could be grown for the purpose, at the expense of this Government, if you will give due notice of your desire to avail yourself of it.

His Excellency cannot, however, give you any promise that a company would be organized to acquire the rights of using your machines in this Island, but will bring your proposals to the notice of the Jamaica Agricultural Society, who will, doubtless, give the matter all possible publicity.

3. I am to add that Sisal is grown on a commercial scale in some of the Turks' and Caicos Islands, a Dependency of Jamaica.

(*g*) Re Exhibition at Liverpool.

Drawing attention to the publication made in the "Jamaica Gazette" on the 15th August, intimating that the Liverpool Tropical Products Exhibition would be opened on the 16th September.

(*h*) Re Brussels Sugar Convention.

Enclosing copy of papers on the subject relating to the various resolutions forwarded from the Colonies referring to the Brussels Sugar Convention.

(*i*) Re applications for the position of Government Inspector of Stock referred.

The Secretary said there were three applications referred from the Colonial Secretary's Office, which might be filed for future reference, if required.

(*j*) Re economic uses of Prickly Pear.

No. 8975-10644. 14th September, 1907.

I am directed by the Governor to send, for the information and consideration of your Society, the accompanying copy of a letter and enclosure from the Commissioner of the Turks' and Caicos Islands, with regard to the economic uses of Prickly Pear.

No. 101-631. Commissioner's Office, Grand Turk, 3rd Sept., 1907.

Having heard of the severe and prolonged drought in Jamaica, I have the honour to forward six copies of a notice, which was published in the Government Gazette, giving information with regard to the economic uses of Prickly Pear.

2. Most of the information has been gathered from publications of the U. S. Department of Agriculture, but is supplemented by personal and local observation and experience.

3. About fifteen years ago there was a severe drought in Antigua, and large numbers of cattle died in a certain district, where, had there been a supply of Prickly Pear, I feel convinced hardly a head would have been lost.

4. In the large pasturage areas of Jamaica, it would be a safe investment if five to ten per cent. of the land were planted in Prickly Pear to provide emergency rations in periods of drought. The leaves have but little value for fattening purposes, but I have, in my own case, found them useful in assuring a regular supply of milk, when grass and other green fodder are not to be had.

5. The plants grow for many years, and do not require replanting, and the spines are sufficient protection for storage purposes.

(Signed) F. H. WATKINS, Commissioner.

The Secretary was instructed to publish the enclosures sent, and call attention to the matter in the JOURNAL.

White Scale. The Secretary submitted the following letter from Mr. R. P. Rerrie, Montego Bay :—

Montego Bay, 6th September, 1907.

I think action, and immediate action, should be taken by your Society to fight the white scale, which is rapidly spreading all over the Island, and, unless checked, will, in the course of a few years, exterminate all the citrus trees in the Island. The scale appeared on my property, Pitfour, near this town, within the past year, and has since infested almost every orange and lime tree, of which there are great numbers on the property. I have tried spraying the trees with various preparations, but the scale will not succumb to treatment.

I am satisfied that the scale is the San Jose Scale, which, I understand, nearly killed all the orange groves in California, and was checked by the importation of a species of ladybird. I would suggest that you bring the matter before the next meeting of the Society, and I have no doubt that if your Society approached the Agricultural Department of the United States on the subject, that Department would cheerfully afford every assistance possible.

That the scale is a serious menace to the citrus industry in the Island can be borne out by Mr. A. B. Rerrie, who has lost nearly all his lime trees off his property, Hopewell, in Saint Ann, and others who have suffered severely.

The Director of Public Gardens said the specific for white scale, which had been used successfully here, at Hartlands and elsewhere, was the lime, sulphur, and salt wash.

The Secretary said he had prepared matter on the subject for publication, and he was directed to describe the treatment, and publish reports on the experiences of any who had used this wash.

Auditor's Report. The Secretary submitted the Auditor's Report for the period from 1st January to the end of the financial year 31st March, 1907, which had been circulated among the members of the Office Committee, who had found it satisfactory.—This was tabled.

The Secretary submitted letters from Mr. L. G. Desporte and Mr. Briscoe, Agricultural Instructor, *re* imported Sea Island cotton seed. These intimated that the Sea Island cotton seed, imported from St. Vincent, supplied to Mr. Desporte, after being disinfected at Hope, had failed to grow. Mr. Desporte wrote that he held the Secretary and the Agricultural Society jointly and severally responsible for any loss sustained. He also asked the Secretary to visit the fields in his official capacity, and inspect the results.

The Secretary submitted a full report on the subject, which stated that the seed, on arrival, had germinated ninety per cent., had been sent to Hope for disinfection, and had been returned in three lots. The seeds returned in the first lot had grown all right, but the second and third lots had got heated on the way down, apparently, as they were hot on arrival, and were immediately spread out on the cellar floor, and shovelled over every day. Continual tests of the seed showed that one-third only of this seed grew well. There was nearly £20 worth of seed in the cellar.

The matter was allowed to lie over in the meantime.

Cassava Starch. The Secretary submitted letter from the British Cotton Growing Association, asking for samples of starch, which he had sent, and they promised to report the results of the experiments.

Board of Management Letter from the Hon. H. Cork was submitted, pointing out that the members of the Board of Management only represented nine parishes, five parishes being left unrepresented by a local representative man.—This was tabled.

Board of Agriculture. The Secretary submitted letter from the Board of Agriculture informing the Board of Management that Mr. C. A. T. Fursdon, the agricultural representative of that Board, had resigned, as his duties would not leave him time to attend the meetings of the Board, and asking the Board of Management to be so good as to nominate another representative in his place.

The Secretary stated that the Agricultural Society was entitled to two representatives on the Board of Agriculture, but had only nominated one last time. It was proposed and seconded that Mr. E. W. Muirhead and Mr. D. Campbell be nominated to His Excellency as representatives of the Society on the Board of Agriculture. This was agreed to.

St. Elizabeth. The Secretary submitted letter from Mr. Cradwick to the Director of Public Gardens, stating that the Secretary of the Moore Town Branch would be glad to find home and employment for four boys from St. Elizabeth. The letter was directed to be referred to the Parochial Board of St. Elizabeth.

Premiums on Imported Stock. The Secretary submitted a report on the matter of the premiums offered by the Society for bulls, pigs, and goats during the last financial year. He said there were six imported bulls entered for the three premiums; one had died, two belonged to one importer, and, by the rules, only one could receive a premium, which left four bulls eligible for three premiums, so that one would require to be eliminated. The difficulty was, that one person had not inspected the four bulls, so that a proper comparison could not be made. He had inspected two, one belonging to Mr. Martin, and one to Mr. Fitzherbert. Dr. Dewar had inspected one belonging to Mr. C. A. Nunes, and Mr. Adam Roxburgh had inspected the bulls belonging to Mr. C. L. Walker. He had intended to visit the district of Mr. Arnett, Agricultural Instructor, but had to put his visit off, as he could not get away. Mr. Arnett was exceedingly anxious that he should take a fortnight in October to visit Trelawny and St. Ann, and, if he could arrange to be away, he could see these bulls, and the matter could lie over till then. It was, however, difficult to leave the office, unless capable assistance could be secured in his absence.

The Secretary was authorised to inspect the bulls, to visit Mr. Arnett's district, and to get the same temporary assistance in the office, while he was travelling in St. Ann and Trelawny, as he had while away travelling in Manchester and St. Elizabeth.

Bulls. The Secretary submitted applications for the bulls to stand for next season, beginning 1st November, and he was instructed to refer these to the Live Stock Committee to settle the various matters.

Secretary's Reports. The Secretary submitted report of his visit to Manchester and St. Elizabeth, which he was directed to publish.

He also submitted an application from Mr. Palache, submitted through the Governor, for a grant of £10 to enable him to grow an experimental plot of yams, cassava, sweet potatoes, corn, beans, and other provisions on the lines found so successful in South Manchester, as the people in the plains of St. Elizabeth stuck to their old methods, which did not appear to be very successful. It was agreed to make the grant from the money at the credit of rent, which was not being used.

The Secretary also submitted a statement of the St. Elizabeth seed distribution, and which showed a debit balance of 2s. 11d., which he asked authority to be paid from the funds of the Society. Agreed to.

The Secretary submitted the reports and itineraries of Instructors, which he said he had carefully checked, also the lists of franked envelopes used.

New Members. The following new members were elected:— Louis King, Industry, Halfway-Tree; Chas. P. Jackson, Gilnock, Santa Cruz; J. A. W. Foster, 3 Duke Street, Kingston; Stephen T. Glanville, Greenvale Pen, Mile Gully.

Adjournment. The meeting adjourned to Thursday, 17th October, at 11.40 a.m.

REPORT OF THE SECRETARY ON HIS VISIT TO SOUTHERN MANCHESTER AND SOUTHERN ST. ELIZABETH.

I BEG to report that I visited South Manchester and St. Elizabeth during the fortnight, ending 31st August, as per itinerary herewith, accompanied by Mr. J. T. Palache, Agricultural Instructor, inspecting his work, holding meetings of the various Branch Societies and their out-districts, and endeavouring to form new district committees as adjuncts of established Branches. Mr. Palache has been pressing me to visit South Manchester, in this connection, for several years, but I have not hitherto been able to arrange to be long enough away to do this work fairly. Since Mr. Palache has also had the Parish of St. Elizabeth included in his district. and had his whole time employed as Instructor, he has been still more pressing, and so have some of the Branch Societies. As I have visited the dry parts of Manchester and St. Elizabeth at their best, it appeared to be a good time to visit them, after a drought of nine months, to see where the Agricultural Society might be useful. The Board had also made a grant of £10, which, at my request, the *Gleaner* had also supplemented from their fund by an equal amount, and to which Dr. Neish, of Spanish Town, kindly added £2, to supply good seed corn, peas, beans, and potato plants to enable planting to be done whenever rains fell. In ten years experience, with notes kept of the weather, I have never known rains to fail in August—"corn rains"—and enable planting to be done about the 15th, so the time I planned to visit the district was "planting time." Before leaving I arranged for a supply of seeds and potato plants. It was difficult to get the last, because of the dry weather everywhere, but Mr. F. W. Aris, of Linstead, had, fortunately, two acres being lifted, which he generously offered free, if I could take them at once, as he wished to replant over the same ground. As there was no coastal going west until the 11th of September, and as the members of the Christiana Branch Society could deliver some potato slips at Kendal, I arranged to distribute them at Kendal station. I also despatched supplies of seeds by coastal steamers previous to going away. The Government readily granted free freight on the railway, and the Royal Mail and Direct Line gave free freight on their coastal steamers to Alligator Pond and Black River.

I noticed a considerable difference for the better in the holdings in South Manchester since I was there before. There are more of them enclosed in neat stone walls, and there seemed to be an epidemic of wall-building going on. On enquiry I found this was, in a measure, due to the stringent rule in the prize holdings competition giving points for fencing, and about which the judges are very particular in stock-raising districts, and the Instructor has laid special stress on this in Manchester. This is right too, as few things cause more bad blood and quarrelling than stock getting out of, and into, a place, and causing damage to neighbours crops. People had also been taking advantage of their enforced spare time, caused by the drought, to build or mend walls.

It had been quite as dry, and as long dry in South Manchester as in Southern St. Elizabeth, but on holdings, where not only heavy mulching, but *heavy manuring* had been done, although the soil was generally poor and stony, their crops had not failed, although, of course, retarded and diminished by the long drought. One man, Teacher Benjamin, to take one of the best instances, who freely admitted he had had his interest in agriculture stimulated by Mr. Palache, and that he had practically benefited by his instruction, had just taken in a crop of fine white kidney beans and fair corn, in spite of the drought. His yams looked very green and luxuriant, and he dug up a good specimen fit for market. His plantains, between the yam hills, and, in some cases, interfered with by the luxuriance of the yams, had bunches very much larger than the average, and he also still had some vegetables growing. How was all this done when so many had not a single thing on their holdings to eat, not even cassava ? It was entirely due to the heavy manuring and mulching the ground had got. The soil was rich and soft, with the manure dug in, and was quite moist below. His horse was stabled, and cows were penned at night, and every scrap of manure put into the soil. The holding of Mr. John Brown, the winner in the first-class of the prize holdings competition, with the full total of one hundred points, is nearly a model one. I am not sure about his hedge—though it looks well—being perfect, as the roots must take up a lot of room, running into the cultivation. Here, also, the manure, from the stallion he keeps for service, is carefully saved ; his cow is brought into a pen at night, and pig pens are put through the coffee ; there is even a small fowl-house, the first I have seen a settler have. His certificate, won in the prize holdings competition, is framed and hung up in his house. Yet he is not a man of powerful physique, fit to do a great amount of manual labour. It is simply the industry of himself and family. His pimento trees stood through the coffee, and he and his family were busy picking. If Jamaica had thousands of such holdings, instead of this one being the exception, what a country it would be ! In South Manchester the coffee trees had borne heavily, but the drought had affected the beans badly, and, if rains did not come soon, most of it would burn. As it is it must be light, and yet, on the holdings where manuring was practised, as well as mulching, the crop was heaviest and holding best ; that was plain Mulching has always been practised, to a large extent, in all these dry districts, but there is a big difference between the haphazard, rule of thumb mulching and the systematic heavy mulching. Where manure has been dug into the soil, or land has been penned, the soil is like a sponge, and absorbs every drop of rain that falls, holds the moisture, and then the heavy mulching conserves it. The Instructor's constant and persistent teaching to small proprietors in South Manchester, during these five years, has been to keep stock, hand feed them, save the manure, apply it, and mulch the soil heavily besides. The Instructor is also being now appreciated by some large proprietors, and his intimate knowledge of horses and small crops is useful to them, if they take advantage of it. In starting, we visited Brumalia, where I found the Shorthorn bull, "Henbury Beau," quite recovered from his illness, and in fair fettle. Mr. Lewis had not been averse to visits from the Instructor, and had taken up the idea, strongly recommended to penkeepers in the JOURNAL, of using some of his land, and the manure from his stock, for growing small crops likely to be useful and profitable, even if it was only patches of green forage. On most pens manure is still, unfortunately, allowed to waste. As a result, he had cassava—which people were coming from a distance to buy—and, on his red soil, sugar canes, and bananas useful for his stock and household purposes, were growing well. The stallion, "Gallahad," looked well, and has a very highbred, stylish appearance. We also visited Mr. Martin's place at Great Valley. Mr. Martin is most enterprising, and reaps his reward. He has had two of the Society's Shorthorn bulls, "Crystal Ray" and "Desmond," and he patronised the bulls when they stood at a distance from his place. He had just sold two young half-bred

bulls, by "Crystal Ray," and had two fifteen-month old heifers that showed more than the growth of ordinary two-year olds—not hand-fed, and the drought notwithstanding. Of course, his upland climate suits Shorthorns better than the lowlands. We also saw a fine lot of calves by the King's bull, "Desmond." This is a bull of the highest breeding, but through fever and poor treatment at one time, he has not picked up in appearance, and so has not been appreciated, but his calves are not only as strong and active as any common calves, but with Shorthorn character plain upon them. I am very glad that Mr. Martin has done so well with bulls that never were very well patronised. With all these half-bred Shorthorn heifers to put to his imported Lincolnshire red bull, which is a really fine animal, he has the nucleus of a great herd. He did well, too, by his imported Devon, and what is not Shorthorn in his herd will be Devon. Great Valley looked fairly green, as there had been one shower, and it was wonderful how the grass had responded to it. Mr. Martin was busy taking up land to plant corn, to be followed by guinea grass, and was then ready to plant largely when rains came. He also cultivates permanent and catch crops by manuring and mulching his stony, red soil, and had coffee, bananas, cane, cassava, yams, cocoes, and vegetables, also Ceara rubber, looking perfectly well—certainly far from dead out, certainly something for current use—drought notwithstanding. Mr. Miles, at Stone Hope, has also some very fine coffee, and also buys from the settlers around in the parchment, milling it, and grinding it for market. He has some interesting figures about coffee, which he has given Mr. Palache to use, and which are worth publishing, if he will permit this. These proprietors were making somewhat less than a third of their average pimento crop.

At New Broughton we held a meeting at 4 p.m., in connection with the almost defunct Grove Town Branch. Mr. Johnstone, Presbyterian Minister, presided; the Vice-Presidents, Mr. Martin and Rev. Mr. Grant, were also present. There was an audience of fifty-four present, whom I addressed, and I found them intelligent and receptive. One can soon see by the faces, whether an audience is interested, and follow the points made, as well as by the discussion on various questions which may follow. The Society was resuscitated as the South Manchester Branch, and the Instructor has a good idea of having one big Society there, under that title, the different districts near by, but with members too far off, to attend the meetings, or where there are not enough members to form a Branch, to be formed into district committees. This idea has been practised in Hanover and works well. Next morning we had a good meeting of fifty-two at Plowden Hill school-house, the Rev. Mr. Shaw, Presbyterian minister, presiding. He had already formed a Plowden Hill Agricultural Society a month before, but the meeting readily agreed to become a part of the South Manchester Society as a district committee. This was an interesting meeting, and I am hopeful that, now the Instructor has his whole time devoted to his work, and will visit each district on fixed days, taking care always to have a few handbills posted up as a reminder, and which I will supply, there will be constant interest stimulated, and more life imbued into the agriculture of the district. How long would the interest in churches and schools last if ministers and schoolmasters were withdrawn altogether, or only visited places at long intervals? And yet agriculture is the support of these, as it is the support of everything and everybody in Jamaica—professions, trades and commerce alike, but this knowledge of its importance, of its vital effect on everything has not apparently been realized, or acted upon hitherto. Now, after twelve years' work of the Agricultural Society, in getting into touch with the great mass of producers, the small settlers, to arouse their interest, to impress upon them their importance as producers, that the powers that be are not their enemies or oppressors, that their prosperity is also the Government's prosperity and the Island's prosperity, that their welfare can come through no outside agencies, although it can be helped thereby, but

mostly through their own efforts, it is something to have over fifty Branch Societies established. The Agricultural Society and its various agencies can show them where to make effort and how to make effort, as well as the need for effort. Clergymen and teachers have recognized the value of our agricultural propaganda, and they have helped us greatly. Most of the presidents, and some of the secretaries of our Branch Societies, are clergymen. Occasionally a merchant or large estate owner takes sufficient practical interest in a local society to be an officebearer. I cannot help but think it is a pity that more of this class do not take practical interest in local societies. However, Mr. R. J. Miller, of Christiana, is President of that Branch, and the Rev. Dr. Turner acts as Secretary. Mr. Santfleben, merchant, Lucea, is the President, and the Rev. Mr. Gartshore, Secretary, of Hanover Agricultural Society, and as the Branch covers the whole parish, and is the biggest one, there is a deal of work to do. The Appleton Society is next largest. Mr. J. M. Farquharson is its President and Mr. Ramtallie, teacher at Retreat, its capable and enterprising Secretary. This Branch has out-districts also, all kept in touch by Mr. Ramtallie. Santa Cruz Mountains Branch has Mr. Stafford Maxwell as its President, and he makes it no nominal duty. He has offered prizes to the members on whose holding there is the greatest improvement between this year and next. The Instructor has already inspected the holdings entered, taken notes, and reported on them, and next year they will be inspected again.

We went on across the savannahs into St. Elizabeth to attend a meeting at Top Hill. The impression people have gained from some of the reports of the long drought in St. Elizabeth is, that the parish was, like the Sahara Desert, all burned up, nothing green, but this only referred to the Southern part—in the Northern part everything was green. At any rate, in a district where plants and trees are accustomed to long dry spells, even where no care is taken, and no cultivation given, it would require a drought of even a longer duration to entirely kill them out. Grape vines still bore fruit, and we were presented with a bunch weighing three and three-quarter pounds, very fine grapes indeed. These were grown at Letitz, one of the very worst off districts. This is interesting, as showing how well grape vines can stand dry weather. Cassava and yams looked green all along, but they had not commenced bearing, they were simply living, yet, after rain, they would come on quickly and bear, although there could not be a large bearing. At Top Hill, Teacher Smith, a progressive cultivator, had yams in full bearing, and three hills of negro yams dug up gave a fine yield. *Here the land, however, was manured as well as mulched.* There were very few signs of preparation for planting in these parts of St. Elizabeth, and very little interest was betrayed in the meeting at Top Hill; nine persons assembled. It was intended to form a district committee of Santa Cruz Mountains Branch here, but even those present would not promise to become members.

The differences in the short journey, between Manchester and St. Elizabeth, was very remarkable, not only the difference in the attitude of the people towards agricultural instruction, but the difference in the methods used in agriculture. Here there were few signs of preparation for planting, though it is accepted everywhere else in the Island, by large and small cultivators, that the dry weather is the time to prepare for planting, both to clean the ground and break up the land, more especially, I should say, after a long drought, when it could only be a matter of a week or two before rains would come; but the people in these plains have the idea that land must be broken up very little, if at all; everything must be planted in holes, in hard ground, and it is best to have the rain before beginning to prepare. According to my idea, they thus waste valuable time. I explained, as well as I could, how both theories would work, that with the accepted theory of the land being broken up in dry weather, every drop of rain would be absorbed, potato slips and corn could be put in after the first good rain, and even though not immediately followed by more rain,

the soil being soft and moist, this would favour the growth of the roots, even if the surface dried again, whereas when small holes in the hard ground are made, time would be lost making these holes after rain had come, most of the rain would have washed over the surface of the soil, and run off where it was useless, the small holes in hard ground would soon dry up, and, altogether, *the results in these parts did not show that their own methods were quite so satisfactory as they thought they were.* But they were dogged in their own ideas, therefore, I think, that there is all the more need for agricultural work in these localities. The people keep the best stock in Jamaica; it was really marvellous to note the fine condition of horse stock and cows among the small settlers. Big penkeepers, further up in the parish, and in other parishes, lost large numbers of horse stock and cattle, but I could not hear of small settlers in these localities having lost any. Certainly the price for mules and horses, asked for among them, was greater than the value asked for the same kind of stock elsewhere. The manure from their stock is wasted in most cases. Further up, towards Santa Cruz and Malvern, the idea is more prevalent of saving manure, and is more practised than down there. Yet the soil, in these places, is wonderful. It has been burned over and hoed up a few inches, certainly not more than four inches deep, for generations, and still the response to good rains is instant, and growth is marvellously quick. The digging fork is being used in other parts of the Island to a great extent, but here it is not used yet; if it were used the soil turned up from below to be mixed with the top soil, would be found, I think, almost entirely fresh, and, after it was aerated, would give rich results. There is no need whatever for there to be any destitution in these parts, in spite of the long droughts they are subject to. It is the healthiest part of Jamaica, as witness the physique of the people, the long lives and the large families, and the wonderful condition of their live stock at any time of the year. The land produces as great crops of yams, sweet potatoes, and cassava, as the best parts of the mountains, where there is new land, with which I am very familiar; that is in ordinary seasons. The penning of their stock, the saving of manure, the use of the fork, less burning of the grass, and continual manuring and mulching, will enable them to raise all the provision crops that they wish for their own use, and have a surplus to sell during any nine months drought they may happen to have, and they will not suffer much in a six months drought. In addition to crops of provision, they have as good tobacco soil and climate as can be found in Jamaica. They could grow grapes better than any other part in Jamaica—I am referring to the savannahs—they could grow cotton if they wished to, but not with their "hard soil" methods, so that what they most need is a proper appreciation of their opportunities, together with a great deal more industry. I saw sisal hemp growing in the driest and most stony places. I knew it grew there, and I had taken the opportunity to bring with me native-made rope of sisal hemp sold in Christiana at 6d. per lb., splendid rope, far more lasting, especially against wet, than mahoe and trumpet-bark rope. These ropes are made by some people around Christiana in their spare time, a district which does not so much need, and which is not so suitable for, that industry, as the plains of St. Elizabeth. The sisal hemp flourishes in the driest parts, and the fibre is stronger there than in wet districts. I showed the rope at meetings, and explained how people, instead of wasting time in the evenings, with this fibre all around them, could sit down and make ropes, which penkeepers in their locality would be glad to buy in preference to thatch, trumpet, or mahoe rope. I show a sample of this rope herewith. Much of the rope used in Jamaica could thus be made by people in the dry parts in their spare time, and sold to storekeepers, who could retail it.

I inspected the experimental acre to be put in cotton, which has been arranged for at Yardley Chase, at the instance of His Excellency the Governor, who is paying the cost. The Instructor had the land prepared, according to the best methods—the hard sticks put on one side, and the

soft trash piled between the rows, which had been forked for the crop. The soil looked good, and was very crumbly. The people had objected to preparing it in dry weather, because the ground was too hard, but, on being pressed, they had started to work, and found that after all they could make more per day than the current wages of the district. I suggested that a row of guinea corn should be put round the acre as a border, which would be both ornamental and useful. Late in the afternoon we held a meeting at Malvern, under the auspices of the Santa Cruz Mountains Branch. There was only a fair attendance of twenty-two people. Mr. Stafford Maxwell, the President, presided. The next morning we visited Friendship, where Mr. Henry Maxwell showed us logwood trees in various parts dying out. This had been the subject of investigation before, but after looking at the environment of the trees, and noting nothing that could possibly account for the trouble, we thought we would like to try some investigation of the roots. Taking a tree, which just showed signs of beginning to die back, we followed up one of the main roots until we found the feeders, and here we discovered a curiosity in these small roots being covered with a sort of tubercles, under which we found plant lice feeding. This was, apparently, the cause of the death of the small feeding roots, after which, of course, the main roots also died, and gradually the trees died out. I took specimens of these roots and handed them to Mr. Fawcett, who, I believe, has forwarded them to the United States for examination. This disease of the logwood is a very serious matter as hundreds and hundreds of trees are dying in St. Elizabeth, sometimes singly, sometimes in groups, and sometimes whole stretches, and I am surprised that the owners of logwood properties in St. Elizabeth have said so little about it. It not only affects logwood in dry districts but in wet districts, so the cause is not accountable to dry weather, or lack of drainage, or the proximity of other trees at all.

An experiment with a couple of acres of Caravonica cotton is likely to be tried in this locality by Mr. Guy Robson, and I shall follow the results of this with great interest. The small test already made has proved very successful. All the people in the neighbourhood were being supplied with water from Friendship well. Ponds, never known to be dry in the memory of man, were now dry, but though I saw ominous signs of rain, I found that when we mentioned this to the people, they had so often been disappointed by clouds appearing and blowing away almost every day, that they had become pessimistic, and did not think the signs we saw meant anything more than what they had seen for weeks.

Mr. Maxwell had three horses in training for the next Kingston races, which ought to give good account of themselves. Then we went on to Santa Cruz village, and, just as we arrived there, a thunderstorm came on, and a heavy downpour of rain, which, apparently, spread over the savannahs southwards. We stayed with Mr. M. H. M. Farquharson, at Cornwall, over Sunday. Mr. Farquharson had, a few days before, put in a few acres of cotton seed, and had land ready for more. I noticed that the seed had germinated splendidly. This was from the first lot of St. Vincent seed sent out from the office. Mr. Farquharson was also trying an experiment in growing vegetables for Panama, and had a fine piece of land prepared. He had not forgotten the fact that that land for vegetables will require continual upkeeping, and had fixed up a pen just over the wall, and put up a shed, where he proposed to pen a number of cows every evening, and feed them on grass, cutting also long coarse grass for bedding so as to retain the urine. This is the principle the small settlers should go on for their crops. It is a system that seems to come natural to sugar planters. Rain came early in these parts of St. Elizabeth, and, as we went northward, we got into a wetter zone. Pastures had all quickly recovered from the drought, and guinea grass and para grass were already luxuriant, and also the settlers' crops of ground provisions. We visited places, where cassava was growing beautifully, and saw sweet cassava dug up that had been planted in April, and people were already using

their crops planted in the spring. The provision grounds in this locality looked in pretty good shape. We held a meeting at the Moravian Mission Station, at New Eden, at 11 o'clock, where there was a good attendance, and a district committee of the Balaclava Branch Society will probably be formed there. We went on to Balaclava, and visited Mr. Pengelly's place, at Oxford, where we inspected the coffee works, in which I was much interested. Ground coffee is put up here in large tins, and is sold throughout the the Island, and is also exported. We also visited the small cultivation of Mr. Roberts, who is following out Mr. Palache's instructions, and planting criollo cocoa along the river side, and he had pruned back and thinned out his long-top coffee. This cultivation looked exceedingly neat, and had won a prize in the small holdings competition. His example had infected his next neighbour, who is also building walls, and beginning to cultivate cocoa. We held a meeting at the schoolhouse, at Balaclava, during a thunderstorm, which affected the attendance, but we had a fair meeting, and people were interested. Next day we were to have had a meeting at Aberdeen Moravian Mission Station, but the wind, rain, and thunderstorm prevented any attendance. The wind blew so hard, knocking down bananas and plantains, that we thought a hurricane had come, but, fortunately, it was only a squall. On Wednesday, the 29th, we went into the mountains of St. Elizabeth, and held an interesting meeting at Mulgrave, where the people are intensely interested in vanilla, which grows wild in the woods. The Board of Agriculture has made a special grant of £10 to enable the Rev. Mr. Maxwell, who, himself, grows and cures vanilla, to visit all the parts, where vanilla is grown, and give instruction in the curing, about the month of October. We had three meetings fixed for the one day, and could have carried them through, but for the rain, which came on before we got to Elderslie school-house, and prevented any attendance, except a few, who had been interested enough to come right through the rain. However, we addressed some eighty school children on school gardens, and the importance of agriculture to them. A meeting was also to be held at Retirement at 2 o'clock, but, owing to a thunderstorm and heavy rain, nobody could venture out. On the 29th we went to attend a meeting at the Moravian Station at Newton, and, through the kindness of the Minister, the Rev. Mr. Black, had the advantage of addressing the people, who gathered together for the mission meeting, over two hundred people. A district committee of the Appleton Branch will probably be formed here. On the 30th, we held a meeting of the Appleton Society in Appleton, Mr. J. M. Farquharson, the President, presiding. This was a most interesting meeting with a vigorous discussion afterwards on the shortcomings of shows and other matters.

At all these meetings, I talked of the purposes of the Agricultural Society, and how the Branches could be useful to themselves, to other districts, and to the Island. I explained what other Branches were doing to help themselves; talked of some of the impressions made in my tour, made comparison of districts, and asked them to utilise the service of the Instructor to the fullest, now that his whole time was engaged in the work, and pointing out wherein he could be useful to them.

The importance of our agricultural work, and the amount of good that can be done through properly organized Branches, has been more impressed on me than ever. The great responsibility that devolves on an Agricultural Instructor has also been more vividly brought before me, and I do not think that the Board, or the Government, or the Instructors themselves, fully realise the full extent of the responsibilities of an Instructor. It was a wise step to make fixed districts, and appoint Instructors for these for a term of years at least. It would be now the greatest mistake to shift the Instructors to different districts. They follow out a certain line of work of their own, and they ought to take the responsibility of all this, but if they are removed, and a new Instructor comes, he may have different ideas, work along different lines, although, practically, to the same end. Yet the people do not understand this, and they may

become confused. An Instructor, sometimes, has made what appear to be mistakes, yet which might not have been so, if he had been able to follow out his plans ; but if mistakes had been made, which had done real harm, as has sometimes occurred, it is hard on the Instructor who follows to make headway against the bad impression. I must say that the people, as a rule, look with pleasure for the visits of an Instructor, who has made himself useful and agreeable. I believe they readily recognise the earnestness of a man, and very readily perceive whether his ideas are practical and applicable to their district, and to their circumstances. Talking over the people's heads about grand schemes, and proposing to do things that will involve much expenditure of money, quite out of their reach, does harm. The training and experience of an Instructor, through visiting many districts, and so many different people, who talk their experiences over with him, and tell of their successes, and their failures, and their difficulties, enable an interested, observant, and open-minded Instructor to pick up many ideas and valuable knowledge, and with an individual, who, naturally, thinks that all his geese are swans, the Instructor is able to make comparison, and draw conclusions fairly and soberly. All this knowledge and experience can enable an Instructor to be exceedingly useful to small settlers in every line they work at, if they can only be made to understand that he is at their service, is impartial, and wishes them to utilise him. Through Branch Societies this information can be brought home to many. Mr. Palache is exceedingly eager to have some experiment grounds just where the people are most backward. The Society has had its experience of these in the past, but such ventures require close overlooking, regular visits, careful attention, and intimate knowledge of the crops, on the part of the Instructor, which these former ventures did not get in any way. If we can guarantee these requirements, I think what Mr. Palache asks for would do much good.

JNO. BARCLAY, Secretary.

CAUSES OF DEGENERATION OF CATTLE.

THIS has been a matter I have been studying for some years, and have come to the conclusion that most of the causes are solely to be attributed to negligence, carelessness, ignorance, and want of practical interest of many stockowners.

There must, first, be stability in the control of pens and farms before the necessary improvements that will bring back the old days of prosperity can be made. The purpose of this article is to invite the attention of penkeepers to errors of omission more than commission in dealing with their pastures and stock.

(1) GRADUAL DETERIORATION OF PASTURES.—So far as manuring is concerned, pastures receive nothing, except what they get in the shape of the droppings of animals grazing on them, and the decayed wood from fallen trees, and leaves. They are often too shaded with logwood, pimento, and other trees. The bare spots in a pasture should be harrowed, or the crust otherwise broken, and grass seed from such as guinea, para, or crab grasses should be systematically gathered and sown there before rains, or planted by root in rainy seasons, which is easier. It is known that such spots can be covered with good grass in a short time, if stock be prevented from feeding until the roots are established.

(2) Want of Tillage of Soil for Grass.—Again, the pastures are never tilled, consequently the soil gets consolidated by the effects of rain and constant pressure, caused by the trampling of animals. The air, thus, does not freely enter into the soil, and gives rise to many a circumstance unfavourable for successful growth of grass. Grasses that grow in wet lands have not the sustaining qualities of upland grasses, being more succulent, and containing less of the fat and muscle-forming ingredients. As far as practicable the land must be rested systematically, the grass pastures should be allowed to seed, and the seed ripened, and shed every other year before feeding, so as to strengthen the roots, and the better fattening qualities of the grass. In the feeding line, quality, rather than quantity, should be the controlling idea.

(3) Bad Management on the Part of Breeders.—Cows, when in calf, grazing on common, do not receive any special treatment, therefore, the blood not being rich enough to supply the required amount of materials for the proper development of the fœtus, it is not unfrequently that calves are often constitutionally weak from their very birth. Again, in most cases, the calves neither get the required amount of milk, nor any other food which should contribute towards the formation of bone and muscle, etc. This is another very great check on their development, though there may be enough grass for cattle to eat, it only fills up the stomach without supplying the proper quantity of nutritious matter.

(4) Want of Proper System of Breeding.—As a rule, little or no care is taken in selecting the best animals only to breed from, and few have any particular aim before them, except to get some kind of cattle. Any bull that can be readily purchased is taken, without any consideration of the breed he belongs to, the defects or good qualities he possesses, his age, size, strength, etc. Thus it very often happens that large, superior cows are covered by small bulls of very inferior quality; good cows by young immature bulls, young cows by old, almost used up, bulls, and healthy cows by unhealthy bulls, suffering from some hereditary disease. Thus, the calves produced are naturally not so healthy and strong, as is desirable, for, under the influence of the natural law of inheritance, all the qualities, whether good or bad, of the parents are transmitted to them in a greater or less degree. It may be, that one of the parents being stronger than the other, the defects of the latter do not become perceptible in the calf until exposed to circumstances favourable for their development. The degeneration of cattle is, to a great extent, attributable to this indiscriminate system of breeding, which prevails almost throughout the Island.

(5) Tick Plague.—Many penkeepers, who have always been accustomed to see both ticks and ticky cattle on their pens and farms, are, unfortunately, not inclined to attach much importance to cattle ticks, and, as a rule, through lack of appreciation of their damaging effects, placidly consider them as of little consequence. True, a few parasites may remain on cattle indefinitely, without

causing any noticeable effects, but it is not uncommon to notice bovine animals in pastures with their hides very heavily infested with these pests. In such cases it can readily be seen that the continuous sucking of blood causes, more or less, impoverishment of the circulation. The animal must, therefore, be fed heavier, in order to meet the demands of the parasites, in addition to the ordinary needs of the host. If the ticks be removed from the body, the bites inflicted are often distinguished by small, inflamed or reddened areas, somewhat swollen, with perforations of the skin, which may allow the entrance of various kinds of disease germs, and showing that, more or less, irritation of the hide is produced by these parasites. This condition, together with the loss of blood, frequently induces an irritable state, and evidences of uneasiness, commonly known as "tick worry," which results in the loss of energy, and in other derangements of the animal's health. Moreover, if the infestation of ticks is not controlled, the cattle may be so reduced in condition that growth is retarded, and, in the case of young animals, they may never become fully developed, but remain thin, weak, and stunted, a condition that has been termed "tick poverty," and easily succumb to other diseases, as a result of lowered vitality. In milch cows this debilitating influence of the numerous ticks is shown in a greatly reduced milk supply. This should not appear strange when it is considered that some animals harbour many thousands of these blood-sucking parasites. If these parasites are crushed, it will be found that their intestines are completely filled with a dark, thick mass of blood, abstracted from the animal host, and containing nutriment that should go to the formation of milk and flesh, and the laying on of fat. In some rare cases the large number of bites, over a limited area of skin, may be followed by infection with pus-producing organisms, giving rise to small abscesses, which may terminate in ulcers. The discharge from such sores is, in some cases, the mere oozing of blood serum through the incision made by the mouth parts of the ticks, keeps the hair moist and matted together, and the laying and hatching of fly eggs in these areas give rise to infestation, with destructive maggots, causing ulcers and other complications that require medical treatment.

(6) DROUGHT—This is a terrible drawback to stock, particularly when it extends to the end of April, as the vegetation all dries up, and it is only the dry hay and water the poor animals have to contend with for existence. More is often lost during a dry year than can be regained in three or four years in dry weather districts. The loss is not confined to cattle alone, but there is also the permanent lowering of the carrying capacity of the pen.

(7) RAINFALL.—The continual destruction of woodlands every year must lessen the regular fall of rain in the Island. This is a serious matter, which should be stopped, as much as possible, by large landowners, who are in a position to do so.

(8) WATER.—This is one of the chief causes of degeneration

and disease, particularly in dry weather. I have seen cattle drinking from a pond, which contained green colour, muddy fluid, whilst the owner had good water a quarter of a mile away. He did not seem to realize the poisonous liquid his animals were drinking. This must be a caution to stockowners, that stagnant pond water is not good for stock, as all ponds ought to overflow their banks in the rainy seasons, so as to wash all putrid water accumulated away, to enable the water to be good for drinking purposes. In days gone by penkeepers and estate owners had an idea that cattle fattened on muddy water. That was their theory, but in these days of civilization we ignore this idea, and convince ourselves that animals need as good water as humanity.

SUGGESTIONS FOR IMPROVEMENTS.—Pastures should be manured occasionally with dung, if possible, and the grass ploughed, so as to slacken the soil; it would, undoubtedly, prove beneficial to the grass, also to the fattening qualities of stock. We all know that grass requires sun and air to enable it to grow, as well as any other plant, and if your pastures are allowed to grow up in a logwood forest, how can you expect to fatten your stock as you used to do? Trees in a pasture should not be less than half chain apart to allow the grass to grow luxuriantly.

At present we are better off, in regard to imported bulls, than we have ever been, so this will overcome our difficulty in obtaining good blood. Experience has shown that every pen ought to have a canefield kept purposely for feeding the young stock in dry weather. This I consider important, and as all stock eat cane and flourish on it, sugar cane can stand the drought better than anything else in the grass line of plants. There are *many* pens that have lands that could be irrigated by river, wells, and other sources, that could be planted in grass, and kept for dry weather with little expense.

GENERAL REMARKS.—Some people may ridicule *my* causes of degeneration of stock, but I have written this only in the hope that it may cause some of your readers to think over the subject. If they do, they must come, I think, to very much the same conclusions as I have done.—CHAS. E. EARLE, Black River.

[We think that the writer has dealt fairly with the subject, and that his conclusions are right. We differ from him, however, in the way he would manure a pasture. So far as that is concerned he recommends animal manure spread over the ground. It is at all times difficult to get a quantity of this, and it is highly recommended in cultivations. But we do not think it is the best thing to use on pastures already heavily stocked by animals, and which have been receiving droppings of animals for generations. What they mostly lack now is phosphate and lime, and these can be applied through one kind of fertiliser, namely, Basic Slag. If this be applied at the rate of 2 cwt. per acre, just before rain, and the pasture shut up for three months, the difference between this particular pasture and others, not so fertilised, will be easily noticeable. This would not

cost more than 5s. an acre, and within three months the effect could be easily seen on the stock pastured on fields so treated.—Ed.]

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The best thing to be done with poor pastures is to plough them up, and under arable cultivation they could be aired and sweetened sufficiently to produce paying crops. Salt is a good thing to refine pastures that have run a bit coarse, and to be impressed on this point one has only to pay a visit to the marshes on the Norfolk coast, where the air is laden with salt, and the spray is sometimes thrown hundreds of yards over the beach into the marsh land; indeed, landscape experts aver that this grass is the finest and cleanest that can be found in England, and thousands of turfs cut from Norfolk marshes are not a hundred miles from the Thames Embankment.

Many pastures become almost bare of grass, and rank weeds and fungus take the place of useful herbage. With such pastures as these it is absolute waste to apply farmyard manure; under such foul stagnant conditions as these it is best to well harrow three or four times, either early in the autumn or spring, and sow some good mixtures of grass seed, and apply a mild stimulating chemical manure, instead of farmyard dung. It is no use feeding a foul pasture of this description with dung.—*Farm, Field and Fireside*, England.

PARA RUBBER.

The second edition of Mr. Herbert Wright's book on "Hevea Brasiliensis, or Para Rubber: its Botany, Cultivation, History, and Diseases" (A. and M. Ferguson, Colombo, Ceylon, publishers), as will be seen from our advertisements, is now on sale in Kingston, and we direct the attention of all interested in rubber to its pages. Possibly, no more practical work on the subject has been published; it is comprehensive in every respect. The list of chapter titles alone gives an indication of the breadth and scope of the volume. Opening with the history of Para Rubber in the East, successive chapters deal with climatic conditions, cultivation, soils and manures, tapping operations and implements, how to tap, when to tap, where to tap, yields, physical and chemical properties of latex, production of rubber from latex, drying of rubber, its physical and chemical properties, its purification and vulcanization, kinds of Para Rubber, diseases of Para Rubber, what to do with the seeds, and the cost of planting in Ceylon. Each of the subjects is dealt with in full detail, and running, as it does, to over 160 pages, composed entirely of factual matter, it is difficult either to summarise or to quote. Possibly for us, however, the most interesting parts at the present moment are those relating to the age at which tapping may be carried out, and the methods of tapping. The author says that "the question of how to tap is one which deserves special consideration, and is not out-weighed in importance by even the process of curing or

methods of planting this product. *On the methods of tapping depend not only the quality and quantity of the latex and rubber but the life and future condition of the trees.*" Up to the present the individual planter has very often followed his own system of tapping, using instruments of his own invention, which seemed to him to best suit his purpose, so that in this respect a popular standard instrument has not yet been produced. There are, however, at least a round dozen knives and chisels on the market, and several of these are excellent tapping tools. Mr. Herbert Wright, in the chapter on "How to Tap Para Rubber Trees," deals with the subject at length, and discusses the several styles of V incisions, herring-bone, spiral curves, and of single oblique cuts, very clearly. Of the various systems, the spiral curves stand most in favour in Ceylon and elsewhere on account of the good yields obtained.

The system consists of a series of parallel cuts running round the stem, which end separately at the base of the tree, or of shorter cuts ending at convenient places. The number of spiral cuts is determined by the circumference of the tree there, being usually one curve for every girth of 12 to 18 inches at the top of the tapping area. This system has given an average of 2 lbs. per tree for each month's tapping at the Botanic Gardens at Peradeniya, and has been continued in the same districts until a total of 16 lbs. per tree in twelve months has been obtained. A process, by means of which the latex can be kept in a liquid condition on small estates, where few and widely scattered trees are being tapped, is explained. This liquid condition is secured by the addition of ammonia, formalin, sodium carbonate, and any alkaline chemical which is readily soluble in cold water. It is stated that it is better to use either ammonia or formalin, and to avoid any of the mineral salts; the former can be readily removed, and may even escape on exposure to the air in the ordinary process of manufacture. Tin or iron receptacles for collecting the latex are not so good as enamelled ones, or those made of aluminium, as they are apt to corrode on exposure, and to lead to a discolouration of the rubber, when the latex contains large quantities of tannin. In all methods, except the herring-bone and spiral systems, it is necessary to fix the tins on the trees, and, therefore, to have some sharp point to press against the bark of fixing. In writing of the parts of Para Rubber trees, which are best for tapping, Mr. Wright says that, in practice, it is easier to tap the stem from six feet downwards than any other part, though the erection of stands, scaffolding, and the use of ladders, for tapping higher parts of the stem and thick branches, have been tried with successful results. Estates are known, where rubber in paying quantities has been obtained from six to twenty feet, but tapping above six feet is not generally adopted. In discussing the relation of age and size of tapping, some interesting analyses of young Castilloa Rubber are given. It is stated that "one cannot help being struck with the fact of the quality of the rubber, from Castilloa trees, depends in almost every case on the age of the trees. In some cases the rubber from old trees is shown to contain 82.6 per cent. of caoutchouc

and 7.4 of resin. The rubber from four year old Castilloa trees has been shown to contain 64.1 per cent. of resin as against 8.2 per cent. for twelve year old trees. The importance of age is further exemplified by analyses, showing a gradual decrease in percentage of resinous substances, which occurs with an increase in the age of the part of the Castilloa tree from which the rubber is obtained, the young twigs yielding 5.8 per cent., the large branches 3.77 per cent., and the main trunk only 2.61 per cent. of the resinous bodies. If the rubber contains a very high percentage of resin, it is usually considered inferior, and is, in some cases, almost useless. Increase in age is certainly to be associated with an improvement in the physical properties and quality of the rubber, whether one considers plantations of different ages, or parts of the same tree." With regard to Para, however, a minimum circumference of twenty inches a yard from the ground, and a minimum age of four to six years, can be accepted for most rubber properties, the better developed trees being tapped first. The best season to tap is also dealt with, and in summing up, in this connection, Mr. Wright says that the best flow of latex is obtained in Ceylon when the air and soil are abundantly supplied with moisture, and when the temperature is considerably low. A period of drought, lasting until seven or twelve days, appreciably affects the flow of latex, but, although under such conditions the quantity is reduced, the quality is usually improved. The production of rubber from latex, along with the dry, is dealt with in full detail, but it would seem as if the production by natural coagulation would be sufficient for us in Jamaica in the meantime. If the pure latex is allowed to stand in a receptacle, it finally coagulates, and the caoutchou globules, with other substances, float to the top, leaving, more or less, clear liquid behind. By the addition of chemical reagents, or by subjecting the latex to different temperatures, coagulation may be hastened or retarded. The coagulated substance, after washing, pressing, and drying, is ultimately known as the rubber of commerce. On estates, where the daily quantity of latex is small, the use of chemicals and machinery for rapidly coagulating it is not always necessary, the latex is put in shallow pans and allowed to set. The biscuits, when ready, are rolled to squeeze the water out, and then placed on wire gauze, wooden, or coir shelves to dry. Such are the broad lines on which rubber is procured in Ceylon, but this summary gives a small indication of the wealth of information contained in the book. The series of illustrations alone, numbering over fifty, are so carefully chosen, and so admirably illustrate the text, that the value of the work is considerably enhanced.

JOHN STEWART.

BEES.

THE same rules hold good in bee-keeping as in other stock-raising, only, instead of the sire being "half the herd," the most potent factor in success, it is the queen bee that is the all-important

factor in the apiary. Her powers of laying, the kind of workers she gets, are everything to the beekeeper. Fortunately, nature has secured, in its peculiar way, the drone bee as fertiliser, that the race is to the strongest drone. The bees of some hives of the same strength, apparently so numerically, can lay up double the honey of another, because they are busy, bustling bees, strong of flight, and expeditious in gathering nectar and pollen. They can travel quicker and further, if necessary, and visit more blossoms in a day than the bees of a neighbouring hive. Beekeepers here are only beginning to understand this, and that the closest observation should be kept on their hives to find the best workers. Queens should be introduced into the weak hives from the strongest queens.

* * *

Here is another thing that most beekeepers have not long understood, perhaps most do not understand it yet. At the beginning of every new season, from December to February, according to district and weather, their bees are not strong enough to take advantage of the rush of blossoms. Why is this? Simply because, as late as the month of September, they extract all the honey from the hives, when the bees have no opportunity to lay in stores again before the district change of weather takes place in October. September is not a month of much blossoming, as a rule (this year is an exception), and October comes with, perhaps, two weeks' continuous rain, with the hives empty of honey. The bees die by the thousand then. Even without such a period of rain, the bees have hard work to feed themselves, owing to the scarcity of blossoms, and do not increase much. No honey should be extracted after June or July, according to district, unless the bees are intended to be fed from September to December, which *only* few apiarists do here. Then the bees will have stores to draw upon, if required; they will keep strong, they will increase, and be in a good state to take full advantage of any blossoming which may start from December. Now this is a most important thing for beekeepers to consider.

JIPPI-JAPPA HATS.

We are glad to know that the interest in the making of jippi-jappa hats, which are so popular for local wear, so largely in demand by tourists, and which, when they are properly made with the best straw, are in demand abroad, is becoming practical. The first step was to get the plant raised in quantities in suitable humid localities. It grows well among rocks, where there is plenty of rain, and along little streams; in fact, just in those places where ferns grow best. It is not a plant for dry districts, or even moderately dry districts; it must have plenty of rain. It is a curious thing that this plant has been practically confined to one small district in Jamaica, that is, along the watersheds of the Pedro River and Wag Water, comprising the districts of Glengoffe, Lawrence Tavern, Castleton,

Above Rocks, and St. Christopher chiefly, thinning out on the borders of these districts. We have interested ourselves in this industry for many years, and to impress the value of hat-making to the country still, we cannot do better than use part of the article we wrote in the JOURNAL for March, 1901, as follows :—"There may be many reasons why Jamaica, so remarkably well situated, geographically, for commerce and with fertile soils and good climates, should be so very poor in cash, but one reason may be plainly discerned by anyone accustomed to flourishing communities in the north, and who compares the habits of the people—the 'masses' say—with those in Jamaica. This one reason is the awful waste of time in Jamaica. For instance, in the long summer twilights, and especially through the long, dark, winter nights, and, after the work of the day is over, be it household or outside work, the woman folk of the Shetland Isles seem to be constantly employed knitting, and while their tongues wag, and laughter and song go on, their fingers are very busy, it seems to the spectator, automatically, and they are able to send to southern markets those highly esteemed shawls, and other "Shetland wool" articles, with considerable gain to themselves. And so in other parts of Scotland, servant-girls and mill-girls, who have worked hard all day, immediately they get their dinners, are busy with their knitting, or needlework, and it matters not whether they sell their woollen-knitted articles, if they are worn by themselves or their men folk, it saves outlay. But there is nothing like this utilisation of odd time in the country districts of Jamaica. There are long, dark evenings, from September to March, and there is need of an industry to occupy the time of both men and women and young folk, to produce something, not alone useful to themselves, but something saleable, for the fault has been with proposed new industries, that, though desirable, and occasionally practicable, often there has turned out to be no paying market for the product at hand. If in the north they make woollen goods, meant to keep people warm against the exigencies of the climate, can we not find something parallel for warm climates? Instead of producing something to withstand the biting breeze, and to keep out cold, we must produce something to ward off sun and heat. We find the article for our home industry in jippi-jappa hats; not a new industry, not something requiring to be learned painfully, but an art already indigenous, as it were, and only requiring development. In some districts nearly every man, woman, girl, and boy has had experience in *fashioning these hats, and their fingers are already cunning in the art.*

"There is always a demand for jippi-jappa hats by merchants for export abroad, and at such a price, we have made sure, as will pay people to make them. The demand is not for dozens, or scores, or hundreds, thousands can be taken, provided that the hats are well made, which includes using the best cured straw. The price goes by the colour, fineness of texture, and closeness of plaiting. The hats are wanted as cheap substitutes for the famous Panama hats for summer wear in the north. The fibre used is got from what is called the 'Broom Thatch,' which is not a palm or a grass,

but looks palm-like enough to be called a palm. It is very like the thatch-palm used for thatching houses. Now steps should, at once, be taken to preserve this 'Broom Thatch'; it is not too plentiful, for hitherto it has been chopped down, like other 'bush,' to make room for provision grounds and cultivations. This is a matter for the Branch Agricultural Societies to take up; they are the local organizations able to reach, and make known to, the people in their districts that jippi-jappa hats are wanted; they are always hunting after new industries; here is a promising old one to be rejuvenated. This is a chance to make an income in odd moments mostly wasted; it might even constitute a trade in itself to any family specially skilful at the manufacture of these hats, and for girls not well fitted for field work, it should be so. Whole families, at any rate, can start out making them in the evenings—why not? We do not see why it should be overdone. Do not whole families in whole districts in Germany, many times larger than Jamaica, do nothing else but make dolls, and do not whole families in certain districts of Switzerland make watches year in and year out? father, mother, sons, and daughters, all are engaged in watch making all through the dark winters. We have faith in this hat-making industry; there is nothing imaginary nor illusory in it all. It is certain the plant grows here; there is no doubt about that. It is certain that the people, in the districts mentioned, can and do make jippi-jappa hats, and of good quality, if they please. We have all seen them, and know them, and many of us wear them."

We wrote that in 1901. It has taken six years to create an appreciation of the subject in the country. Lately, some of the Branch Societies have had classes, where girls were trained in hat-plaiting by an instructress. In Montego Bay, Messrs. Kerr & Co. started a hat-making factory, and spent a great amount of time and money over it. It would have been a great thing for the girls of Montego Bay to find light, decent, useful employment, but the great weakness of the country—dislike of discipline—was too evident. To come to work regularly at 7 a.m., and do eight or nine hours work, was too much for their constitutions apparently, and girls there did not appreciate the work. In Kingston this difficulty was got over; either there is a different class of girls in the capital, or more persistent pains were taken in disciplining the staff, or more probably, it was the bigger selection that could be made. At any rate the factory was successful, and every morning at 7 o'clock, the girls came and worked until 5, with an hour for breakfast, all under strict factory rules—fines for being late, and so on.

The staff increased until there were eighty-six girls employed, with nearly as many more in prospect to be trained. We have interested ourselves in this industry, and know that some girls are smart at picking up the art, some slow, some are never of any use. In two months, with steady application, a quick girl can learn to make a fair hat. But there is also the preparation of the straw to learn, and this must be done carefully. Sometimes the use of badly cured straw has spoiled otherwise well made hats, and sometimes, we are

sorry to say, straw has been faked, to make poor stuff, unfit for a good hat, pass preliminary inspection here. But such hats always go bad when packed up and sent abroad, with the result, that merchants in London, when they open the packages, are disgusted to find some have changed colour, and have to send the hats back.

In a good many districts the jippi-jappa plant could be planted out along streams, and in shaded ruinate pieces, where it is damp.

GRAPES.

There are districts in Jamaica where grapes can be grown to perfection. We miss many opportunities of utilising soil and climate in just these districts, where few other ordinary staple and minor products can be raised with profit. In the very driest areas of Jamaica, which are always near the sea-coast, grape vines grow easily and fruit certainly up to one thousand feet elevation, and still do well up to one thousand six hundred feet. We never have looked for an export trade in grapes, for in all foodstuffs that we can produce we must look first to supply ourselves, and now that we have a tourist trade, we must also look to cater for visitors, and make them as comfortable as possible. We are afraid that most people look upon visitors as prey to be fleeced as much as possible. This is, altogether, wrong; they ought to be treated in the best way possible, and in no way will they appreciate good treatment more than by having nice things to eat. Unfortunately for us our grape vines do not bear until June, July, and August, and hitherto attempts to get them to bear in the cool weather have been failures. Still, the strictly home demand for grapes in all the larger towns will be very good, enough, we think, to utilise all the grapes that the limited districts, where they can be produced, can grow. In some countries grapes are cheap, so cheap that you can get your hat filled for a penny. Here the price is more than one can buy grapes for in England. The districts that can grow grapes are, at present, the very poorest in the whole Island. They are the districts from Kingston to Morant Bay, St. Thomas-ye-East, and the savannahs on the borders of Manchester and St. Elizabeth, the Pedro Plains in St. Elizabeth, and the seaboard, from Montego Bay to St. Ann's Bay. Only a few pounds of grapes are sold in Kingston during the year, yet the city is a large consumer of fruit, and could take atl the grapes these districts could produce, therefore, everybody in these same districts holding land ought to produce some grapes, yet only a very few have grape vines. At Yallahs, at the time of writing, early September, there are fine bunches hanging on the vines belonging to the Rev. Mr. Coles, but only a few other people in Yallahs have vines, and they are generally neglected. The Agricultural Instructor there for the district, Mr. Briscoe, is willing and eager to prune vines in the proper season, which is about February, and those who have taken advantage of his services have had

a good bearing. In the savannahs of Manchester and St. Elizabeth every yard should have a vine: a good many have, but they are never pruned back, and so bear small bunches, and *irregularly*. All over the world, where grapes are grown, pruning back to old wood is essential, as grapes bear on the new season's growth. It is really sad to see people in these dry districts complaining of having no work to do, and no money, when there are valuable crops they could raise, both for export and home use, not requiring the outlay of money, only work. Grape vines that are properly treated cannot be killed by dry weather, and will bear in spite of long droughts. The present year's drought is, perhaps, the longest on record, but, through it all, grape vines have been bearing splendidly, and bunches of 3 to 4 lbs. weight have not been uncommon. It is wicked to waste opportunities. People will bolster themselves up with the hope that the country can prosper through some outside agencies, and they ought to be helped from some vague somewhere, whereas there is nothing so certain that their own comfort and prosperity, and the prosperity of their district, of their parish, and of the whole island, cannot come except through their own efforts, though these efforts may be stimulated and assisted by outside knowledge and energy, and capital. But all these agencies will be utterly useless, if people will not help themselves. This applies to all.

SCALE INSECT ON CITRUS TREES.

In parts of the Island, especially in St. Ann, Trelawny, St. James, Westmoreland, and St. Elizabeth, citrus trees, more especially those trees not kept clean at their necks, and which receive little attention at any time, such as lime trees scattered through pastures, have had white scale spreading over them recently, and it is the exception, in those districts, to see citrus trees, more especially limes, free from it. Many trees have been simply smothered with this white scale until they have died out. It attacks most readily those trees growing in unfavourable conditions, and such trees are less able to resist its attacks. There is no royal road for getting rid of it; that can only be done by means of birds, or insects like lady-birds or black ants, the last of which are common here, and should be encouraged rather than destroyed as they are scale eaters. It may be expensive to spray or wash trees, but it is either that or let the trees die. The lime, sulphur, and salt wash has proved successful in California against the dreaded San Jose Scale. This mixture is recommended to be painted, washed, or sprayed on to citrus trees attacked by the scale.

At the Hartlands Plantation, where it has been successfully used, Mr. A. E. Wigan has been good enough to write us the following note on the subject:—

"I am in receipt of your favour of the 20th, asking for a short note on the methods used by us here for destroying white scale on

orange trees by the lime, sulphur, and salt wash. I have much pleasure in complying.

"To Make Thirty Gallons of Wash.—Take 5 gallons of water, put in 10 lbs. of powdered sulphur, stir, and boil thoroughly for rather more than an hour, stirring at intervals. When it is quite boiling, throw in 10 lbs. of temper lime, and 5 lbs. of salt. While the fire dies down continue to stir thoroughly till all is well mixed. For use, add water till the whole is 30 gallons.

"In applying the wash, use a sprayer for the leaves, but if the scale is bad on the wood, use small brushes for the bark.

"We find this treatment successful, though it does not extirpate the scale from the grove altogether. A grower in St. Andrew, who tried it, said it did no good at all. The dead scale insects do not come off the bark for some time after the spraying, but can be seen dead under the microscope."

* * *

"With regard to the white scale on lime trees, about which you ask," writes Mr. Cradwick, "the most successful thing which we did, towards stopping their ravages, was white-washing all such stems of the trees as were large enough. The kerosine emulsion, etc., cost more than the limes were worth, not simply the cost of the materials, of course, but the cost of application, which requires very skilled labour to be of any use. Needless to say such skilled labour is not always available. I think the sulphate of iron wash might be a great improvement on the old plain white-wash, and would recommend this this to be tried.

"The recipe is as follows:—5 lbs. sulphate of iron boiled in 5 gallons of water; 5 lbs. temper lime, slaked and carefully mixed in 5 gallons more hot water. Mix the lime water and the sulphate of iron water together while they are hot, and apply this wash to the stems of the trees with a white-wash brush.

"This not only seems to smother out scales, but lichens, and generally improves the health of the tree. There is no doubt that long periods of drought considerably increase the ravages of the scale, both by rendering the conditions more favourable for their propagation, and by lessening the vitality of the trees. A dry year or two does great havoc; two or three wet years do an immense amount of good."

STOCK NOTES.

Never Trust a Bull.—Even the most gentle animal, when it is young, should have a nose ring inserted by the time it is 3 years old. At any time a bull of that age may get fierce, and bulls are all treacherous.

* * *

South Devon Cattle.—An English expert says: Whenever and wherever the South Devons have come before the public, their

excellent condition has been the subject of favourable comment. As far as milk goes, they are all there; a cow has given 63.15 lbs. of milk, producing 2 lbs. and a ½ oz. of butter in twenty-four hours. Butchers declare the beef is set beautifully firm, and there is no waste in cutting. A bullock has been known to scale 22 cwt., 1 qr., 27 lbs.

* * *

SUSSEX CATTLE.—In the county of Sussex, England, Sussex cattle are still used for ploughing. Sussex cattle have always been famous as plough oxen, and they are a grand beef breed also. A Sussex bull would make a good cross with quarter-bred or half-bred Indian cows, improving their beef qualities, and not deteriorating their value as planters stock, while their docility would be greatly increased. There is only one Sussex bull here, that fine animal imported by Mr. C. A. Nunes, of Falmouth.

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MILKING PERFORMANCES.—Baron Rothschild, at Tring Park, England, keeps several herds of cows of different breeds, and accurate statistics are kept concerning their performances. Some of the figures are interesting as a comparison. For instance, the average of 57 cows in the year was 6,707 lbs. of milk, and the maximum yield from each cow 10,000 lbs. Jerseys—Average yield of 21 cows, 6,919 lbs. in the year; maximum yield of 2 cows, 10,000 lbs. Red Polls—Average yield of 36 cows, 6,748 lbs. in the year; maximum for 1 cow, 12,000 lbs. Ayrshires—Average per cow, 6,000 lbs., with some cows reaching 10,000, and some as high as 13,000 lbs. Kerry cows made an average of 6,500 lbs.; maximum cow, 9,500 lbs.

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VARIATION IN YIELDS OF COWS.—So very sensitive is a milch cow—and the better milker she is the more sensitive she is—that even a change of milkers will affect her flow of milk, even though they be equally skilful and gentle milkers. How much more, then, will rough treatment, change of food, change of location, change of climate affect them. A milch cow has to be treated as tenderly and as gently as a baby, and fed as carefully, to get the best out of her.

A famous Guernsey cow, "Dolly Bloom," which yielded 17,297 lbs. of milk in a year, or over 8,500 quarts in a year, fell off her milk greatly when her usual attendant became sick—in fact she dropped from 20 quarts to 15 quarts, and never returned to her former production.

This explains how cows here sold as milkers, and as giving so many quarts, often fail to yield up to the stated figure when sold and removed to a new home, with different handling, and, often different feed.

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KICKING COWS.—The making of a kicking cow is generally through faults in the first milking. The teats may be a little rough

and sore, and, naturally, the cow's only remedy against a painful operation is kicking.

The boys invariably wet teats before milking, with the first milk drawn, unless trained otherwise. The milk dries on after milking, attracts flies, and leaves the teats more rough and more sore.

Before taking up a cow to be milked the teats should be rubbed gently with some emollient. Lard is about the most simple thing, and it is effective ; so is castor oil, but best of all is Jamaica healing oil. This remedy should be a standby in every pen and dairy. After milking, a little of this poured in the hands and gently stroked on to the teats will prevent any soreness. There will be no difficulty about calves sucking afterwards ; they soon learn to like the flavour, and a little of the oil is good for them. The teats and udder should be washed before beginning to milk. Before a heifer calves her teats should be gently rubbed every day with Jamaica healing oil for two weeks before. She will be then in good, easy, healthy condition for milking, and will not dread the act of milking her.

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IN-BREEDING.—He only has made a genuine success of cattle breeding who maintains or improves the character of the animals received from other hands. In-breeding is a two-edged sword. In the hands of men, who were adepts in its application, it brought about some of the greatest successes in shorthorn history. By the concentration of the blood of favourite animals, the distinctive types that have so largely dominated the trade have been created. On the other hand, over-indulgence in the practice has proved the destruction of more than one family of great original merit. Dealing with raw materials as it were, the pioneer breeders were able to reap the highest possible measure of benefit from an appeal to the Bakewell practice, but a century of breeding within herdbook lines has brought the Shorthorns of the present in such close relationships that what was wise procedure in the early days would now be the height of folly. What was once heterogeneous in its composition has by the operation of the pedigree registry system been rendered homogeneous. The fact that close breeding proved effective many years ago in the hands of a few men of rare capacity affords no justification whatever for continued in-and-in breeding by their successors, unless accompanied by usual care and capacity.

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KEROSENE OIL.—Besides its primary purpose of lighting lamps, this is a useful article for stock. One part kerosene to two parts sweet oil or castor oil, and one part of Stockholm tar, is an excellent dressing for ticks and sores of all kinds ; also for hair lice. The same mixture makes an excellent hoof lotion when used on the hoofs of horses for sandcracks, and it also cures greasy heel. The same mixture, with one part sulphur added, rubbed on the back of the head of a fowl, underneath the wings, and at the tail, will drive off l ce. It is also good against sores and fleas on dogs and cats. For

cleaning sores on stock, and for assisting hair to grow on horses. use one part kerosene to three parts cocoanut oil. Mixture: one part kerosene, two parts castor, cocoanut, or linseed oil, one part Stockholm tar. For ticks, lice, fleas, bad sores, sandcrack, and greasy heel.

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TURPENTINE.—Turpentine is a product got from pine trees. These trees are tapped for this product, and afterwards cut for lumber. To the stock-keeper turpentine is a very useful product. It is a vermifuge, that is, a specific for worms, either in horses, cattle, pigs, or fowls. A half teaspoonful is the dose for worms in fowls, one tablespoonful is the dose for pigs, two tablespoonfuls for cows under a year old, or foals under a year, four tablespoonfuls for full grown cows and horses, all mixed with, at least, four times the quantity of cocoanut oil and castor oil mixed, that is, a half of each. It is also a mild antiseptic for sores and any wounds, if used with equal parts of cocoanut or castor oil, or both. It can also be used to kill hair-lice, but it is not so effective as, and is far more expensive for this purpose than, kerosene oil. For worms in stock: one part turpentine, two parts cocoanut oil, two parts castor oil. Dose as above. Use the same mixture for all cuts, sores, and bruises. Cost in Kingston, 1s. 6d. per quart, 6s. per gallon.

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STOCKHOLM TAR.—This is entirely different from gas tar. Stockholm tar (Archangel tar, pine tar, wood tar are different names for the same thing) is got from pine trees, whereas gas tar is got from coal, and is a by-product in making the coal gas to light the lamps in Kingston. Stockholm tar is the product of the pine trees, which form a large part of the forests of northern Europe. It is a good dressing for some kinds of wounds on cattle, or on calves' navels, but should first be diluted with equal parts of linseed oil, sweet oil, or castor oil. After cutting off the tails of sheep, or horns of cows, the stumps should be dressed with this tar. It forms a good dressing for greasy heel, for cracked hoof, and for thrush in horses, sores in cows, goats, and sheep, mixed with equal parts of linseed, castor, or cocoanut oil, and turpentine. Recipe for dressing for above objects :—One part Stockholm tar, one part linseed, cocoanut, or castor oil, or lard, one part turpentine, well shaken before using. Cost of Stockholm tar in Kingston, 2s. 6d. per gallon.

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GAS OR COAL TAR.—This is different from Stockholm tar (which is sometimes called Archangel tar, pine tar, or wood tar), and is used for different purposes. It is a by-product in making coal gas. For making mixtures to kill ticks gas tar is preferable, although Stockholm tar is useful. To one gallon gas tar add four gallons water, one lb. of soft soap and one gallon of sour orange or lime juice, boil for ten minutes. Keep the mixture in a barrel, and when about to use stir up well; take one part (either quarts or

gallons) and add ten parts of hot water, and the wash is ready. If the mixture strips the cows, make it weaker with more water. Gas tar is also a preservative of wood, and is used for painting fence posts and gates.

COMMENTS.

Shows.—There are only two shows fixed to be held so far, both on the same date, January 26th, Trinityville, and Appleton Agricultural Society at Siloah. It is not yet settled whether Kendal show will be held in January next.

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Formalin.—The only effect of the use of a dip of formalin for our oranges was to colour them up quickly; it had no preservative effect. But as our oranges are often shipped grass green, and although fairly sweet, only get a greeny-yellow colour when in the market, so are not attractive, if we could, by the use of formalin cheaply colour them up, it would be worth while doing it.

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Bath.—Bath Agricultural Society has taken a new start since the Agricultural Instructor, Mr. Briscoe, began to visit the district regularly. There has been a large addition to the membership, they have taken up their experiment ground again, and they ask now that Mr. Briscoe should spend two successive weeks in the district on each occasion of his visit to the parish.

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Seeds.—A supply of vegetable seeds arrived in the middle of October for the convenience of members of the Society and Branch Societies. They are all 3d. a packet.

A supply of Irish potatoes for planting has also arrived October. We hope ground has been prepared, ready to plant the potatoes whenever the October rains, if they come, are over. Now just as the seeds and potatoes are arriving, orders for both come pouring in, which cannot be supplied.

We asked those who wish seed potatoes to let us have their orders in August. Every year we do this, and each year people are disappointed, because they *will* wait until planting time before ordering.

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Branch Societies.—Two new local societies were affiliated to the parent society in September, viz :—Brandon Hill in St. Andrew, and South Manchester, the latter including Plowden Hill district as

a sub-branch. Two other societies have been formed, viz:—Letitz and Nain, covering the Savannah district, on the borders of South Manchester and St. Elizabeth, and Stewart Town in Lower Trelawny.

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DROUGHT.—Up till the middle of October some districts had not had rain at all, while others had just enough to keep grass growing, and to put enough water in tanks to keep households going sparingly, although ponds were still dry, yet the eastern, western, and central districts had all the rain they wanted. Rains have been more curiously local than any year we can remember, and, at the time of writing, everybody is becoming anxious about the October rains.

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PINE-APPLES.—A correspondent, in the *Florida Agriculturist*, tells of a Florida pine-apple grower, who ships to London, and, in speaking of the English method of doing things, he says: "I received my returns for my fruit, shipped to England, in just fourteen days after I shipped it. This is a much better record than for much of my fruit shipped to New York, and other markets in the United States. It was prompt returns, and most satisfactory prices." It is believed that Germany will also eventually make a good market for Florida pine-apples.

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PENNY BANK.—It is interesting to note that the penny bank, in connection with the Deeside Agricultural Society, has had £163 15s. 9d. lodged to the end of August. Here we see how people may be encouraged to thrift so that when any untoward thing happens they may have a little money to fall back upon.

Deeside did not look a very promising district for such an idea to take good hold, and we can congratulate the Branch, not only on this practical effort made for self-improvement, but also on the effective way their general business is conducted. We note that every meeting is brought to a close by the singing of the National Anthem, a right and proper idea, which we commend to other branches.

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COTTON.—The last Sea Island cotton crop in the United States, whatever may have been the cause, was less than half as large as the average for several years past, and the planters of this grade are now organized for the purpose of restricting production and maintaining prices. The importation into the United States of long staple cotton (mostly Egyptian) increased from 17,000 bales in 1890 to 133,000 bales last year. But the production of cotton in Egypt is not commensurate with the demand, and cannot be depended upon to supply the needs of the trade in long staple fibres.—*India Rubber World.*

Here is a chance for Sea Island cotton here, in the first place, and Caravonica and Egyptian cotton in the second place.

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Goats.—We are glad to say that when we visited Falmouth we found the imported Swiss goat, "William Tell," had grown to be a huge fellow, almost too big for the native nannies, and that the imported English nanny had given birth to two kids, by the imported Anglo-Nubian ram, both having pendant ears. The kids are getting all the milk now to push them on, but, on test, we understand, the nanny gave two quarts of milk in the morning. These goats belong to the late Trelawny Agricultural Society, and are in charge of H. Broderick, Assistant Clerk of the Courts.

The other imported English nannies have not yet bred, although they have been six months in the Island. The Anglo-Nubian ram is a very stylish and handsome fellow, and is still standing for service in St. Andrew, but will, probably, be removed to St. Ann shortly.

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Rats.—We return to this subject. It is most important that it should not be left to a few energetic and prompt men to deal with the greatest pests that agriculture has here. So many people complain to us of the depredations of these animals, and yet so few do anything to help themselves. Trapping should be done continuously. Large wire traps, capable of catching many at a time, can be had. Smart terriers can be trained, and help to keep the rats in check. Cats are even better, but require special training to leave domestic birds alone, a training which they do not often get, and are not always susceptible of. The various poisons, mentioned in August Journal, are good. Hundreds can be drowned by the barrel of oats or bran plan, a particularly successful idea, and the use of rat virus will be best of all, when we get one made here, adapted to local conditions. The Agricultural Chemist has been authorised to carry through experiments with the view of getting a local rat virus.

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Rubber Seed.—We note from the Annual Report of the Botanical Department from Trinidad, for the year ending 31st March, 1907, that there is a great demand for Hevea rubber seeds in Trinidad. There importations of seeds and plants have been made from Ceylon, but with little success. Two cases of seeds, imported by the Department, and by private importers, have been a total failure ; only a few of the seeds have grown. Fortunately for them, there are Hevea trees, belonging to the Department, from which seeds have been secured. These trees were planted in July, 1898, at regular distances between rows of Castilloa, but the latter have been entirely outgrown, and have had to be removed to allow the Hevea to develop. Here different districts are likely to give different results ; in some places the Hevea is outgrowing the Castilloa, but, in most trials, the Castilloa makes much more rapid growth

than the Hevea. Trinidad is now shipping rubber, and some consignments have realised 4s. 4d. a lb.

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SMALL SETTLERS AND COTTON GROWING.—We are thoroughly convinced that, whatever doubts there may be about the success of cotton growing in large fields by planters and companies here, small settlers in dry districts can make a financial success of cotton growing. On those light sandy soils, gravelly soils, limestone grit soils on hillsides, red loam soils, all of which we have in abundance, which in some parts are thickly settled by small owners, and which, at present, produce little for export, cotton can be grown very easily once the way to do it is known by experience. Hence the great value of these small experiments, right on a settler's own place, such as Mr. Arnett is carrying through on the seaboard of Trelawny and St. Ann. If we had the money we should have chosen the most careful settlers, in each district, suitable for the purpose, and paid him to carry through a square chain of cotton cultivation, he to get the proceeds. Thus also we should have secured enough cotton to make it worth handling. But the only money made available is a £2 grant for experiments, which, of course, is hardly an amount that will set a big industry agoing.

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WHITE SCALE.—In St. James, Trelawny, and St. Ann, the white scale on lime trees and orange trees has obtained such a hold that it will, probably, kill out every lime tree in the Island if it is left alone, that is, if nothing is done to check it. Of course, whenever it was noticed, those who owned citrus trees, even though they were not cultivated, should have been prompt in treating their trees, as the owners of cultivated groves have been prompt. At the Hartlands orange and grape fruit cultivation in St. Catherine, this scale has been kept at bay by regular treatment with the lime, sulphur, and salt wash. In the orange and grape fruit grove at Shaw Park, Ocho Rios, belonging to the Hon. Dr. Pringle, Mr. Cory, the manager, has been energetic in fighting this same trouble. At present he is using a wash made of sulphate of iron and lime, which is temporarily effective, but the lime sulphur and salt wash has been found to be a specific most lasting in effect, and on page 236 of this JOURNAL the receipt for making it is given. But, again, the need of concerted action is brought out, for so long as there are stretches of pastures, with lime trees all over them badly infested with this scale, those who have groves in the vicinity will never get it under, and will require to wash the trees at short intervals. Mr. Cory has noticed that those wild trees, with nests of black ants upon them, never had scale, and he is now placing nests on the cleaned trees to see if this is proved in continuous practice. We think this fact was mentioned in some previous JOURNAL, viz: that black ants ere beneficial to citrus trees. It is to be noted, however, that these ants cannot clear a badly infested tree of white scale, but they do prevent the scale getting a hold where the tree is not yet covered.

BANANAS.—The great banana parish St. Mary has suffered as seriously from the drought as any parish, and bananas are very scarce there. This has had, however, the slight compensation of benefiting other parts where bananas are fairly plentiful, where there is a great demand now, with prices that are good for this time of the year. Where rains came in August, the bananas are as fine as in any other year, and we saw most beautiful fruit being sent into Rio Bueno and Falmouth, on the northside. Now that there is a steady demand at Falmouth and Rio Bueno, landowners in Trelawny should plant more bananas. With this business as with others, steamers will not come to ports unless they get good cargoes, and to provide this in places where bananas have not been grown systematically before, needs combined action. It is no use for one or two planters alone to plant largely, as they could not load a steamer. Meetings should be held to discuss the subject, some guarantee got from the companies as to buying, and preparation made to plant in the spring. This would be a matter for an Agricultural Society to take up, had there been one in Falmouth. It would have provided the organisation to approach the companies and to combine large and small landowners for this purpose. The country suffers greatly through lack of concerted action.

Hanover people in May thought their bananas and yams were dried up past redemption, so they wrote : but in June, July and August, they had 13.48, 13.64, and 12.65 inches of rain respectively. They have been shipping yams plentifully to Colon, supplying local demands also, since September, and are shipping bananas merrily.

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PRICKLY PEAR.—In New South Wales and Queensland, the Governments have been offering large rewards for any substance that would kill out prickly pear, which infested large areas of land in these colonies, and was a pest to man and beast. Yet the prickly pear is useful in certain places. On page 214 of this JOURNAL, the Commissioner of Turks' Island suggests the use of prickly pear as a drought-resisting plant. He remarks that, during such a drought as we have been passing through, the leaves of the prickly pear could be fed to cattle, as was done in Antigua once upon a time when they had a long drought.

The prickly pear is a cactus, and we have a good deal of it here, although it is not used, but we have seen the ordinary cactus used for cattle by slicing the prickles off, leaving a solid cube of juicy green stuff. Arising out of the suggestion referred to, somebody has suggested the introduction of a spineless cactus said to have been developed by the great Burbank. As a matter of fact, a spineless cactus has existed from all time, and is, we think, in Jamaica, and what Burbank did, was to take up what already flourished in Arizona and Mexico,—although not so common as prickly cactus,—and improve upon it. We hardly think that the suggestion will

be adopted by penkeepers, as most pens are in limestone districts, where ramoon, breadnut, bas-cedar, and bamboo, all drought-resisting plants, grow, but cactus could be utilised in the driest plains where it already grows, if everybody in these plains was aware that it could be used safely, which they are not; and so we thank the Commissioner of Turks' Island for bringing it to our mind that cactus, including prickly pear, could be used as a great forage in time of long drought.

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COTTON.—Nine years out of ten we can depend in Jamaica, even the driest places, on showers, usually referred to as "corn rains," falling in the beginning of August, and planting of all kinds of seeds, roots, and cuttings can be done then. It is our "second spring." This year, however, the long continued drought had not yet broken completely in most of the districts, where cotton was wanted to be planted, but by the 15th of September enough showers had fallen, although not really good rains, to enable planting to be done in St. Andrew, but it was October before it could be planted safely in other places.

The serious mishap to the imported St. Vincent Sea Island cotton seed was a great disappointment, not only to ourselves, but to the growers, and a great loss also. It caused a serious check to many small growers, who were willing to experiment with small areas, and the useful and instructive information which we might have had from a comparison of the field-experiments, planted with imported and native seed, will not be obtained this season. It must be understood that St. Vincent seed does not grow any better than our Jamaica seed, does not germinate more quickly, or grow more rapidly, or more strongly, or produce any larger crop, so far as we know, but the probability is, that having been more carefully selected, it will produce a better quality of lint. The imported seed, planted in some small fields, has grown well, and we may be able to get comparative results from these. The largest acreage planted in Jamaica this year is in St. Andrew, where good showers have fallen, so that by the middle of October, the plants are well established.

For want of rain, cotton could not be planted much in Vere till October, when abundant showers fortunately came. Along the seaboard of Trelawny, there are excellent conditions for growing cotton, and abundance of good land for the purpose, and it seems strange that no proprietor will plant a small experiment. The Agricultural Instructor, Mr. Arnett, received a small grant from the Society, and, at various places, considered suitable for trial, he has, with this money, had small experiment plots of a square chain planted. Many school gardens also have planted a little cotton. We do hope that results will be favourable from all these plantings, and that we shall be able to tackle the establishment of a cotton industry next spring with more experience and confidence than at present.

CORRESPONDENCE.

(Only letters with replies likely to be of general use are published here.)

Darliston P.O., 30th August, 1907.– At the last meeting of the Darliston Branch, held at the Enfield schoolroom on the 23rd inst., Mr. J. W. Philp asked if any members could give him a remedy to destroy black ants on trees. Several members were ready with remedies: "pour boiling water on the nests"; "cut off the nests and burn them, rubbing the trees well"; "an emulsion of soft soap and kerosine oil"; "white-wash the trees"; "pour Jeyes' fluid into the nests." None seemed sufficiently effectual, and it was decided to ask you if you could suggest a better and certain remedy. I, therefore, beg for an early reply.—J. H. HEADLEY.

[All the plans mentioned are good enough, but if your members are much troubled with black ants on their fruit trees, you want something quick and effective, therefore, let the Branch get a good sprayer to spray boiling water on the ants nests, and then you will get it done easily. Your sprayer would be useful against scale insects, and wasp nests also. But black ants are one of our most useful helps on citrus trees in keeping down scale insects—ED.]

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Belize, British Honduras, 6th August, 1907.—I was much surprised to see the remarks in your last JOURNAL, page 109, in regard to the vast waste of the cocoanut husks in the Cayman Islands. The cocoanut husks, as a manure and supporter of the cocoanut tree, cannot be equalled. Every husk of a nut should be preserved, and a thick layer mulch of husk for the trees would ensure heavy crops. I have ventured to write this only to give support to your statement that it is highly wasteful to throw the husks into sea instead of utilising it as one of the best of manures or feeders of the cocoanut plant. It is a great pity that such thoughtlessness occurs among agriculturists, and especially the cocoanut planters. I have sown the Caravonica cotton seeds you sent me some time back in our new Botanic Station, and, so far, they have made excellent progress.—E. J. H. CAMPBELL, Superintendent Botanic Station.

BRANCH NOTES.

Thompson Town.—On Friday, the 13th October, the members of the Thompson Town Branch of the Jamaica Agricultural Society met in the Thompson Town schoolroom for their regular bi-monthly meeting. The following members were present: Messrs. H. Peck, J. Adams, W. Reid, D. Ellington, J. Miles, John Douglas, J. O. Howell, T. S. Burrell, D. N. Lewis, W. McLaren, W. A. Bryan, also Mr. Hirst, Agricultural Instructor for the district, and Mr. Robert Henningham, a visitor. The minutes of the last regular meeting were read and confirmed. The Secretary remarked on the discouraging manner in which the members have attended the meetings during the current year. Mr. Hirst was introduced to the members by the Secretary, who, for some time now, has been filling the positions of President and Secretary. Mr. Hirst, before beginning his lecture on "The Curing of Coffee," in a few well chosen remarks, pointed out to the members the privileges to be gained by having and keeping up their Agricultural Society. He encouraged them to make a fresh start. The lecturer, in dealing with his subject, explained how coffee was graded by merchants and the price paid for each grade. The chief coffee producing countries were named, the quality of coffee produced, and the price obtained. He explained the value of regular fermentation, and showed

that pulped and washed coffee was easier managed by non-experts than the unpulped coffee. The harm done by pulping in a mortar was shown —this process greatly damaging the berries. Much of the harm done by the careless curing of their product was shown by the lecturer, in consequence of which they received low prices. After answering many questions, a vote of thanks was tendered to him. Members stated that many JOURNALS for this Society had not been received during the year, but a satisfactory explanation was given. The second meeting was arranged for Friday, the 9th November, when the annual report of the Treasurer and Secretary will be read, and the election of officers for the succeeding year. The meeting was then adjourned. During the past week Mr. Hirst has been travelling through the Smithville, Wakefield, Victoria, and the Thompson Town districts, giving practical lessons in the field. Coffee is ripening heavily in these districts, on account of which the schools are not so largely attended. Oranges are being sold at 2s. 6d. per barrel.—W. R. BRYAN, Secretary.

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Mocho and Brixton Hill.—On Friday, the 14th December last, we had a regular monthly meeting, and could not succeed in getting another till today, the 6th September, 1907. There were present the Rev. C. H. Baker, President; Messrs. C. M. Gunter, Treasurer; T. T. Williams, Alexander Lloyd, H. A. Barnes, Samuel James, Robert Adams, Bernard Francis, Matthias Dale (members), L. A. Lennon, and William Henry (visitors), and Mr. J. Hirst, Agricultural Instructor for the district. The minutes of the meeting, held in December, were read and confirmed. The Treasurer presented his report, which was accepted as correct. He was authorized to hand over to the Secretary the sum of 7s. 6d., affiliation fee for current year and postage up-to-date. The present condition of the Branch was next dealt with. All present felt that steps should be taken to arouse members, and get the Branch to work again. The Chairman thought that having the meetings alternately at Mocho and Brixton Hill was against the success of the Branch, and suggested that there should be one place of meeting. After some discussion, it was decided to hold meetings at Mocho. It was brought to the notice of the meeting that the officers were elected to serve for one year, and that new officers should be elected for this year, which opened January last, but, owing to the present state of affairs, it was agreed upon to continue with present officers till the end of the present. The chairman then introduced Mr. Hirst to the meeting. He said he was very happy to have Mr. Hirst living in our midst as an Agricultural Instructor, and promised to do all he could to help him in his work, which was a very important one. Mr. Hirst was given a hearty welcome. Mr. Hirst did not address the meeting on any special subject. He briefly outlined the work of an Agricultural Instructor, and pointed out certain matters connected with this district that he would like to have discussed at our meetings from time to time. He is able, he said, to help the planters more by practical demonstrations in their fields than by lecturing to them at meetings. The chairman, on behalf of the meeting, thanked Mr. Hirst for his helpful words. After discussing a few minor matters, the meeting adjourned. The next meeting will come off on the 11th October.—J. AUG. RHODEN, Secretary.

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Porus.—The regular monthly meeting of the above Branch was held in the usual place on Monday, the 2nd inst., at 7 p.m. Minutes of last meeting were read, also previous minutes, and both were confirmed. It was moved by Mr. Blagrove, seconded by Mrs. McPherson, "that whenever Mr. Palache is expected to visit us, we should, in the future, have our meetings at 5 p.m., which hour would meet his early departure for the night travel. A show concert committee was next arranged, when Messrs. D. Crosbie, A. S. Rose, J. A. Simmonds, R. A. Henry, L. A. Williams, S. A. Hendricks, J. L. Hibbert, W. T. McPherson, R. S. Munroe, A. Red-

dish, Revds. J. R. M. Cass and W. B. Esson, W. A. Morgan (Chairman), and C. Rowland (Secretary) were appointed. At roll-call several members answered to their names. A resolution from the Chairman was next put to the meeting regarding religious meetings, when the members present unanimously agreed to have this matter referred to the Governor, and see what steps can be put to these late hour meetings. The question of the show was next taken up, when it was agreed by all that we should have our "little show" in Porus, and hold it at such a time when co-operation with Kendal could be made convenient. It was further thought that this show should be the means of the Instructor being able to talk to small exhibitors on their exhibits on the grounds, and point out all defects regarding the same. A special meeting of the show committee is summoned to meet two weeks hence. Mr. A. S. Rose will read a paper on Cow-rearing at our next general meeting in October. Moved by the President and carried, that Mr. D. Crosbie give a lecture on the cultivation of coffee and cocoa two months from date, and also on the best kind of cocoa worth growing here. At this stage the evening's work was brought to a close by prayer.—W. A. MORGAN, Secretary.

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Deeside.—The third annual meeting of this Branch was held in the Hastings schoolroom on Tuesday, the 24th September. The members present were: Messrs. J. A. Foote (President), D. Thompson (Vice-President), J. Davis (Treasurer), R. R. McBayne (Secretary), G. S. Ewen, E. Arnett (Travelling Instructor), A. S. Clarke, J. Evans, R. Roche, J. J. Clarke, J. W. Clarke, W. C. Clarke, T. Crawford, J. Elder, R. Barrett, D. Clarke, W. Erskine, G. Walcott, and Mrs. C. Davis. Among the visitors were the Rev. A. G. Eccleston, Messrs. W. J. James, and D. A. Smart. The meeting was opened with prayer by Rev. A. G. Eccleston, after which G. S. Ewen, Esq., was called to the chair. The minutes of the last meeting were read and confirmed. The Secretary presented the following report of the Society for the year beginning 1st September, 1906, and ending 31st August, 1907:—During the year under review, we have had ten monthly meetings, and one special meeting. The membership of the Society now stands at thirty-two, seven new members having joined during the year. It is with deep regret we have to record the death of the Rev. P. F. Schoburgh, who passed away in March of this year. He was one of the Vice-Presidents of the Society up to the time of his death, and at one time filled the office of President. During the year we had three visits from Mr. E. Arnett, Local Instructor, and in March a visit from Mr. W. Cradwick. The expenses of the Society for the year were: affiliation fee, 5s.; seeds, 3s.; stationery and postage, 2s. 1d.; other expenses, 2s., making a total of 13s. 1d. The Society now has to its credit £1 4s. 10d. The Penny Bank started two years ago, in connection with the Society, and in the interest of the community, is still kept up, and has proved a great source of help to many. Their little savings, put by weekly, serve to foster the habit of thrift, and to assist in meeting their financial demands. Amounts lodged to date, £163 15s. 9d. We have had, as other parts of the Island, our spell of dry weather, which affected our crops to a great extent, and, at first, gave a gloomy outlook in the reaping of a good harvest. The constant and abundant showers, however, with which we have since been blessed, have entirely changed the face of things, and everything around is looking bright and flourishing again. We are thankful for the blessings that come to us, and, with the putting forth of our best efforts, success is sure to follow. We ask for more co-operation and interest from the members, as on that depend the up-keep and usefulness of the Society. As we launch forth into another year, let us put forth renewed energy and make the present year even more successful than the past. The report was adopted. The officers for the past year were thanked for their services, and the election of officers to serve during the ensuing year was held, and resulted as follows:—Messrs. J. A. Foote, President; D.

Thompson, and A. S. Clarke, Vice-Presidents; J. Davis, Treasurer; R. R. McBayne, Secretary. The following members were elected to form the Managing Committee for the Branch:—Messrs. R. Roche, J. Evans, R. Barrett, A. Barrett, F. M. Kerr, J. Irving, J. J. Clarke, J. Carey, J. W. Clarke, and J. Elder. After the election of officers, the chairman addressed the meeting, congratulating the officers of the Branch for the measure of success achieved. He referred, particularly, to the steady growth and progress of the Penny Bank since its start. He also impressed upon the members the benefits to be derived from the proper cultivation of such crops as banana and cocoa. A hearty vote of thanks was accorded the chairman. The following new members were enrolled:—Rev. A. G. Eccleston, Messrs. W. J. James, R. McKenzie, R. Shirley, and J. Eccleston. The business part of the meeting being concluded, the members and friends sat down to tea, after which a programme, consisting of songs, recitations, etc., was rendered. Quite a pleasant and enjoyable time was spent, and the meeting was brought to a close by the singing of the national anthem.—R. R. McBAYNE, Secretary.

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Santa Cruz Mountains.—The three hundred and fifth meeting of the Santa Cruz Mountains Branch of the Jamaica Agricultural Society was held at Bethlehem on the 23rd August, 1907. The President occupied the chair, and called the meeting together at 4 p.m. There were twenty-four persons present. The minutes of the last meeting were read and confirmed. As new members, we enrolled Mrs. Frank Maxwell, and Mr. J. D. Blair. The President introduced Mr. Barclay to the members, and congratulated them for having the privilege of his presence. Mr. Barclay gave a summary of his travels through Manchester, and addressed the meeting on various important and interesting subjects. He dealt strongly on co-operation, and pointed out the various objects of interest taken up by each Branch Society. We were specially interested in the explanation he gave of the cultivation of Irish potatoes. The best ordinary time for planting potatoes is the tail-end of October, and the beginning of November, but March and April give the largest crop. Mr. Palache also pointed out that, in order to catch the tourist trade, we must plant vegetables in September. We were warned to avoid hasty preparation. Just here it was thought very discourteous in the Parochial Board of this parish not to have acknowledged the receipt of a resolution sent in by this Society to the Board. The letters received by the Secretary of this Society were taken as read. Mr. Palache congratulated the Society in having many ladies as members, and pointed out that when the wives and sisters are interested in agriculture, the holdings of the husbands and brothers are bound to improve. We hope to commence a horticultural plot, in the near future, in connection with the Society. The meeting deprecated the idea of advising the inhabitants of the drought-stricken districts to emigrate. Rather than leave their attachments, because of drought, as they are not over-populated, they should do like the people of northern countries, who prepare for winter. The best time to prepare the land for planting is in the dry weather, so that the grass, etc., may be used for mulching. Mr. Palache, in concluding his interesting lecture, spoke forcibly on union and co-operation. He also explained clearly the benefits to be derived from the Loan Bank. After the usual votes of thanks, the meeting was brought to an end.

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St. John.—A special meeting of this Branch was held at Kitson Town on Saturday evening, the 14th September, at 4 o'clock. There were present: Messrs. R. B. Farquharson (in the chair), S. A. Banton (Secretary), R. McBean, J. D. Campbell, W. Boothe, F. A. Vernal, William Barton, Miss F. M. Fuller, and a number of visitors. The following were elected members:—Rev. W. Burke, Messrs. E. J. Hendricks, T. G. Richards, C. McLeod, J. Hunter, G. A. Bell, E. B. Daley, Edward Wilson, R.

Maxwell, and S. Maxwell. The minutes of the previous meeting were read and confirmed. The Secretary gave a digest of all the letters received, among which was one from Mr. J. Barclay expressing his sympathy with the sufferers in the recent drought, and also giving important information, such as the relieving of fruit trees of blighted fruits, in order that they may bear an early crop, etc. Mr. Banton informed the meeting that he had received, during the latter part of July, a letter from Mr. J. Hirst, informing him of his intention of visiting St. John on the 7th and 8th August, but he was sorry to say that he had already arranged to leave temporarily, and, consequently, he had to furnish the lecturer with that information. He had read that Mr. Hirst had "abandoned St. Catherine" for a time. He was very sorry, for, in his opinion, St. John needs an Instructor as anywhere else, and, probably, more than many places. Rev. W. Burke, in a forceful manner, urged all present to do whatever was possible to help themselves. The members present, realising the sufferings of the district, unanimously adopted this resolution: Resolved—"That the St. John's Branch of the Agricultural Society respectfully ask the Parochial Board of St. Catherine to complete the tank at Kitson Town at an early date by putting on a catchwater, and erecting a pump, (1) because the tank, as it stands, in the heaviest rain cannot catch more than 1 ft. 6 ins. of water. (2) This action will mitigate the sufferings of the peasantry, many of whom have to travel four or five miles for water. (3) It is learnt, with regret, that the spring, which is from four to five miles from many persons, where the people resorted after the pond was dried, only contains, at present, stagnant water."—S. A. BANTON, Secretary.

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Buff Bay.—A meeting of this Branch was held on Saturday, the 14th September. Those present were: W. Cradwick (Travelling Instructor), John W. Hill (President), C. A. Miller (Vice-President), S. S. Steadman, A. E. A. DaCosta, Rev, W. J. Thompson, I. Haase, J. H. Burgess, W. G. Russell, R. A. Burgess, H. L. MacDonald, C. W. Walters, H. Walsh, N. Booth, R. M. Burgess, R. W. Lane, W. Jackson, and other members of the Society. In the absence of the Secretary, the President read a letter from him resigning his position, and added that he had called on the Secretary and asked him, that in the event of his not being present at the meeting, to deliver the books of the Society, so that the business might be proceeded with. He was informed that the books were at his house, but as he was very busy he could not get them. The minutes were taken as read, and the resignation of Mr. J. Walker Thompson, as Secretary, was accepted. Mr. Jackson was unanimously elected as Secretary, and took his seat. It was agreed to order jippi-jappa plants, to be distributed at the next meeting. The Rev. W. J. Thompson and Mr. C. W. Walters were appointed to form a jippi-jappa hat-making class, and to report at the next meeting. The following members were appointed to the position of Local Secretary in their districts:—C. W. Walters, Fairfield; S. Campbell, Skibo; T. J. Russell, Windsor Castle; J. T. Deiprat, Bybrook; Joseph Baugh, Fruitful Vale; W. Chambers, Black Hill; B. W. Cummings, Tranquility; — Clarke, Claverty Cottage: A. E. Gregory, Buff Bay. Mr. Cradwick addressed the meeting upon the value of having improved sugar canes, and several members gave in their names to be supplied with the improved kinds by the Island Chemist. Mr. Cradwick also distributed Havana and Sumatra tobacco seeds among members. The holding of a show was postponed till late next year, on account of the severe drought experienced in the parish. Mr. Cradwick showed samples of Jamaica grown rubber, and explained the advantage to be had in cultivating it here. It was decided to send a memorial to the Governor to use his influence to hold the Agricultural Conference at Port Antonio. Mr. Cradwick then addressed the meeting at length on the subject of drainage, which was highly appreciated by all. The meeting was then adjourned until the 12th October.—WILLIAM JACKSON, Hon. Secretary.